PB-230 092

STATEMENT ON WATER QUALITY MANAGEMENT GULF-SOUTHWEST AREA

Public Health Service
Dallas, Texas

December 1963

DISTRIBUTED BY:

NTIS
National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

SUMMARY STATEMENT*
ON WATER POLLUTION CONTROL ACTIVITIES

GULF-SOUTHWEST AREA

Water Supply and Pollution Control
Public Health Service
Department of Health, Education, and Welfare
Region VII
Dallas, Texas

Mr. Chairman and members of the Committee. I am Jerome H. Svore, Regional Program Director, Division of Water Supply and Pollution Control, Public Health Service. It is a pleasure for me to represent the Department of Health, Education, and Welfare, and bring you a statement on water quality management in the Gulf-Southwest Area or, more specifically, the river basins in, and adjacent to, the State of Texas. A more detailed report is being submitted for the record.

Nature has blessed the eastern portion of this area which includes parts of Texas, Oklahoma, Arkansas and Louisiana with a high average annual rainfall of over 50 inches, and an abundance of excellent quality water in the many tributary streams. The portion of the area west of the 98th meridian is a water short area with problems of water quality resulting from an annual rainfall averaging 10 inches or less.

Arkansas-Red River Pollution

Salt brines from natural sources cause the greatest pollution problem in the Arkansas, Red and Brazos Rivers basins resulting from the high concentrations of chlorides, chiefly common table salt, found in natural springs, seeps and

---

*Presented before the Natural Resources and Power Subcommittee of the House Committee on Government Operations at Austin, Texas, December 6, 1963.

LIBRARY
Dept. of the Interior, FWPCR
Edison, N.J. 08817

run-off from salt plains. In the Arkansas and Red Rivers basins, fifteen major and nine minor salt sources have been found, generally along an imaginary line running from just north of Abilene, Texas to the vicinity of Hutchinson, Kansas. Two natural salt sources in the upper Brazos River basin cause serious degradation of water quality. The Corps of Engineers and the Public Health Service have been studying the problem of natural brine sources with the help of other Federal and State agencies interested in water quality management. Several million acre feet of water flows down the Red River annually with chloride concentrations above the limits of 250 mg/l of the Public Health Service Drinking Water Standards. Most of this pollution comes from natural sources. Water containing over 5,000 tons of chlorides, expressed as common table salt, flows daily into Lake Texoma, a Corps of Engineers' reservoir on the Red River directly north of Dallas, Texas. The late Speaker Sam Rayburn once correctly indicated that annually this was a pile of salt the size of the Empire State Building. Natural pollution by sulfates (gypsum) originates throughout much of the area. This type of pollution is not as serious or of a magnitude comparable to chloride pollution; but having so many points of origin, it could be considerably more difficult to control.

In the Arkansas River Basin which lies just to the north of the Red River Basin, the quantities of natural pollution are greater, and potential corrective measures appear to be more difficult. The volume of water being polluted is considerably greater than Red River waters polluted from like sources. The new Keystone Reservoir being built by the Corps of Engineers on the main stem of the Arkansas River near Tulsa, Oklahoma, will receive an average daily salt load of 12,000 tons from natural sources. This will result in a chloride concentration well over twice the limits of satisfactory drinking water, and will affect about 5 million acre feet of water annually at this point.

Although the majority of mineral pollution in each basin results from natural springs and seepage from salt plains, oil field brines are still a problem. In 1956 and 1957, the water quality in the Little River, a tributary of the Canadian River, near Norman, Oklahoma was very poor with a chloride content ranging from 1,000 to nearly 3,000 tons of chlorides per day, practically all of which was contained in oil field brines. Today this has dropped to approximately 250 tons per day as a result of an aggressive program of pollution control by the State of Oklahoma. While the quality is still not satisfactory during low flows in the stream, a continuing vigorous program by Oklahoma is expected to obtain further substantial reductions in pollution from this source.

A similar condition existed on Beaver Creek and other West Texas tributaries of the upper Red River where chlorides have been reduced considerably during the last few years. Much of this progress throughout the entire Red River Basin in Texas can be credited to the cooperative effort of the State and the local Red River Authority. During the past three years, this effort has brought about, at the last report, the leveling of some 17,000 brine pits at oil wells where the owners now reinject their brines.

The satisfactory conclusion of the cooperative study of the Public Health Service and Corps of Engineers in the Arkansas-Red River Basins will provide Congress with information on the possibility of controlling brines from natural sources. Control of the fifteen major salt sources coupled with an effective program of State and local agencies to eliminate salt brines from oil field operations and other man made wastes will result in making available, in the basins of these two rivers, large volumes of water of suitable quality for municipal and industrial purposes.

Water Resource Development

Texas and adjacent States have been fortunate and progressive in the development of their water resources. In the Gulf-Southwest Area, the Public Health Service has recommended the inclusion of storage for municipal and industrial water supply purposes in 35 existing and potential Corps of Engineers Projects which are in various stages of development. Since the recent amendments to Public Law 660 enacted by the 87th Congress, storage in Federal reservoirs for the regulation of stream flow for water quality control has been recommended in 19 Corps of Engineers Projects and 4 Bureau of Reclamation Projects.

In the comprehensive report covering the intrastate streams of Texas by the U. S. Study Commission - Texas in 1962, future water needs for municipal and industrial purposes were determined in each of the 8 basins. The pollution load resulting from this future development was considered to receive a high degree of treatment before discharge to the stream. Not in all cases, however, were the streams found to be capable of assimilating this future load. The need for additional dilution water was calculated for each major pollution source, but the actual provision of this water was not included in the plan. If water for quality control is not furnished, feasible means of treating sewage and industrial wastes to a much higher degree than is now possible must be found or unsatisfactory stream conditions will exist in many Texas rivers in the future. In the comprehensive plan of development for the Trinity River proposed by the Corps of Engineers, a need for quality control in the Dallas-Fort Worth area was indicated. As a proposed solution to this problem, the Public Health Service recommended the use of Tennessee Colony Reservoir water on an interim basis. Future water needs of the area, including those for water quality control, could be satisfied by returning water from this proposed downstream main stem impoundment to the point upstream where it is needed.

Other basins in Texas are also being studied cooperatively with the Corps of Engineers and Bureau of Reclamation and will be included in a comprehensive study by the Public Health Service of the Western Gulf Basins to develop a program of water pollution control.

Research

Ground will be broken for a Public Health Service Water Pollution Control Research Laboratory at Ada, Oklahoma, shortly after the first of the year. Initial steps were taken to outline a research program at this new facility at a meeting of the pollution control agencies of this area, along with university representatives, several months ago. Over one hundred areas of investigation were suggested. Work in only four or five of those presenting the most critical problems will be possible during the initial period of operation.

Enforcement

There have been three enforcement actions, under the provisions of the Federal Water Pollution Control Act, in Region VII of the Department of Health, Education, and Welfare. None of these actions have been undertaken in Texas. The first such action in the United States pertained to the oil brine pollution of Corney Creek, a tributary of the Ouachita River, which flows from Arkansas into Louisiana. The second action in the Region, but remote from this area, pertained to the pollution of the Animas River by radioactive materials in Colorado which affected municipal and other uses in New Mexico. The most recent action was during October of this year in regard to pollution of the Pearl River, a river originating in upper central Mississippi and forming the boundary between Mississippi and Louisiana in its lower reaches. The problem arises from the discharge of pulp and paper mill wastes.

Water Quality

The State of Texas is bordered by three interstate streams, the Red River on the north, the Sabine on the east and the Rio Grande on the south. Most of the State is drained by intrastate streams and comes under enforcement aspects of the Federal Water Pollution Control Act only by request of the Governor.

The Red River, as indicated before, has a major problem of natural pollution which is considerably more serious than the remaining problem of oil field pollution.

The Sabine River, which is the State line for a portion of the common border between Texas and Louisiana, is located in a normally water-rich area of high quality water. The potential industrial development of the basin could degrade this source of water, but the provisions for control are available in both States and pollution need not become a problem.

The Rio Grande River, where it forms a border between the United States and Mexico, is under the International Boundary and Water Commission. No water pollution control survey has been arranged with Mexico under any formal agreement, but informally the river from Brownsville to El Paso was inspected by representatives of the Texas State Department of Health, Mexican Government and two representatives of the Dallas Office of the Public Health Service in February 1962. At that time, nearly every municipality on both sides of the river had sewage treatment of some kind, had a plant under construction or had plans to build one. Some treatment plants, including some on the United States side of the river, were overloaded and needed to be expanded or replaced. One of the more serious stream degradation problems is one of mineral pollution. Indications are that this quality impairment is the result of irrigation return flows and oil field activity south of the border.

The Pecos River, a tributary to the Rio Grande, has its own mineral problem which results primarily from pollution from natural salt brines. The Department of the Interior and the local Irrigation District are experimenting with means of reducing this pollution by pumping saline ground water from the river valley near Carlsbad, New Mexico, thereby lowering the water table and reducing the salt pick-up in the river itself. The brine is stored at another site and evaporated.

Construction Grants

Under the construction grants programs for municipal sewage plants, 131 Federally aided projects have been completed to date in Texas. Grants amounting to 9.6 million dollars have resulted in total construction of over 42 million dollars. There are 110 currently active projects of which 22 are under the Accelerated Public Works Program only. The remainder are under P. L. 660, some of which also have APW money in them. These current active projects have a total cost of 33.9 million dollars and are assisted with 10.1 million dollars in Federal funds. Seventy-nine projects are pending in Texas with a total cost of 26 million dollars. In the five-state region serviced by the Public Health Service Office in Dallas, 446 sewage plants have been completed with Federal assistance. Federal funds have been offered, and accepted, by 321 additional projects while State agencies advise that proposed projects, or projects that are under active consideration at either the local or State level, total 260. Summing up, 1027 projects have either been completed or are in a stage of planning that makes possible the estimation of costs involved. A conservative estimate is that total costs will be in the order of 275 million dollars which includes Federal grants amounting to approximately 80 million dollars.

Industrial Waste Inventory

Initial steps have been taken to develop an inventory of industrial wastes for the five States in Region VII. This has been discussed with the States of this Region, and we have been assured of their full cooperation to the extent of their capability.

Federal Installations

An Inventory of Waste Water Disposal Practices at Federal Installations has been completed by the Public Health Service, in cooperation with other Federal agencies. With this as a guide, a survey by the Public Health Service of all Federal installations in the five State area of Region VII has been started. Top priority has been given to those installations suspected of causing water pollution or other public health problems. Specific attention has been directed at installations discharging concentrated wastes to points outside sewer systems.

In general, facilities surveyed fall into three categories. In the first, are installations which provide no treatment and which are contributing to water pollution, public health or nuisance problems. In the second, are installations providing no treatment and needing none, as presently operated. The third group comprises those facilities which have been improperly reported. Excellent cooperation has been secured in planning to meet pollution abatement needs. Target dates have been suggested by the Public Health Service for completion of needed pollution abatement works.

PB 230 092

STATEMENT
ON
WATER QUALITY MANAGEMENT

GULF-SOUTHWEST AREA

by
Public Health Service
Division of Water Supply and Pollution Control
U.S. Department of Health, Education, and Welfare
Region VII Dallas, Texas

Presented before the
Natural Resources and Power Subcommittee of the
House Committee on Government Operations
Austin, Texas
December 6, 1963

LIBRARY
Environ. Prot. Agency WQO
Edison, New Jersey 08817

TABLE OF CONTENTS

CHAPTER | | PAGE
I. INTRODUCTION I - 1

II. ARKANSAS-RED RIVER POLLUTION II - 1

Summary

Description of Effort
Findings and Accomplishments
Recommendations and Future Activity
Pictures of Specific Areas

III. WATER RESOURCES III - 1

Summary

Projects Completed
Future Project Work Plans
Projected Comprehensive Basin Planning

IV. SOUTHWEST WATER POLLUTION CONTROL RESEARCH IV - 1

Summary

Research Program

V. WATER QUALITY V - 1

Summary

Municipal Wastes
Federal Installations
Industrial Waste Disposal Practices
National Water Quality Network Stations
National Water Quality Network Data

VI. INTER-AGENCY FUNCTIONS VI - 1

Summary

Arkansas-White-Red Basins Inter-Agency Committee Stream Sanitation Advisory Committee
Arkansas-White-Red River Basins Map

2

TABLE OF CONTENTS (Cont'd)

CHAPTER **PAGE**

VII. CONSTRUCTION GRANTS PROGRAM VII - 1

Summary

Status of Program
Tables I - VI

TABLES

CHAPTER II: ARKANSAS-RED RIVER POLLUTION CONTROL

Table **Title**

I. Red River Basin - Comparison of Long Term Average and Minimum Observed Flows.
II. Arkansas River Basin - Comparison of Long Term Average and Minimum Observed Flows.
III. Red River Basin Water Quality Data - Water Years 1961-1962
IV. Arkansas River Basin Water Quality Data - Water Years 1961-1962
V. Red River Basin - Quantities of Water Qualities at Selected Stations
VI. Arkansas River Basin - Quantities of Water Qualities at Selected Stations
VII. Major Natural Sources of Chlorides in Arkansas-Red River Basins
VIII. Secondary Salt Sources in Arkansas-Red River Basins

CHAPTER III: WATER RESOURCES

I. Studies Completed to Determine Future Water Needs from Federal Water Resources Projects.
II. Planned Water Resources Projects With Scheduled Completion Dates.

CHAPTER V: WATER QUALITY

I. 1960 Census Populations - Number of Communities and Facilities Considered and Population Served
II. Number of Communities and Population Served by Type of Sewer Systems.
III. Number of Communities and Population Served by Treatment Status
IV. Number of Facilities and Population Served by Type of Sewer Systems

TABLES (Cont'd)

CHAPTER V: WATER QUALITY (Cont'd)

Table	Title
V.	Number of Facilities and Population Served by Treatment Status.
VI.	Number of Facilities and Population Served by Degree of Treatment
VII.	Number of Facilities Furnishing Primary Treatment and Population Served by Plant Classification.
VIII.	Number of Facilities Furnishing Secondary Treatment and Population Served by Plant Classification
IX.	Miscellaneous Treatment Processes
X.	Sludge Handling Practices - Number of Plants
XI.	Communities or Facilities Reported Having No Sewage Treatment Facilities and Current Status
	For: State of Arkansas
XII.	For: State of Louisiana
XIII.	For: State of New Mexico
XIV.	For: State of Oklahoma
XV.	For: State of Texas
XVI.	List of State Agencies Participating in Compilation of 1962 Inventory of Municipal Sewage Facilities
XVII.	Volume of Wastes Discharged From Federal Installations
XVIII.	Federal Installations Discharging Untreated Wastes
XIX.	National Water Quality Network Stations Located in Region VII
	Water Quality Basic Data Red River at Denison, Texas Sabine River at Ruliff, Texas Rio Grande River at El Paso, Laredo, and Brownsville, Texas

TABLES (Cont'd)

CHAPTER VII: CONSTRUCTION GRANTS PROGRAM

Table	Title
I.	Summary of Completed Federally Aided Waste Treatment Projects
II.	Summary of Federally Aided Waste Treatment Projects Under Construction
III.	Summary of Proposed Federally Aided Waste Treatment Projects
IV.	Completed Federally Aided Waste Treatment Projects
V.	Federally Aided Waste Treatment Projects Under Construction
VI.	Proposed Federally Aided Waste Treatment Projects

CHAPTER I

INTRODUCTION

The Public Health Service's Water Supply and Pollution Control Program in Region VII (Arkansas, Louisiana, New Mexico, Oklahoma and Texas) is designed to assure an adequate supply of water suitable in quality for public and industrial uses, fish and wildlife, recreation, agriculture, and all other legitimate uses. The contents of the chapters which follow this introduction → the report are designed to present through narrative and tables the scope of the problem and the efforts being expended in this field.

The increasing demand for water quality control is a consequence of our population and industrial growth, new and changing technology, modern agricultural practices, and new contributions to a continually rising standard of living. The problems of pollution have developed in scope, number, and complexity, in many instances, much faster than the research to deal with them.

The Gulf-Southwest area or more specifically the river basins in and adjacent to the State of Texas has a varied annual rainfall pattern. The eastern portion of this area which includes parts of Texas, Oklahoma, Arkansas, and Louisiana has a relatively high annual average rainfall ranging from over 50 inches and with an abundance of excellent quality water in the many tributary systems. The western portion of the region, however, falls into the category of a water shortage area averaging ten inches of rainfall or less annually with pollution problems indigenous only to this part of the country. In this area, the problem of pollution results primarily from naturally occurring salt sources from springs, seeps and salt plains. The Public Health Service and the Corps of Engineers in cooperation with other federal and state agencies interested in water quality management are actively engaged in a study of the problem primarily in the Arkansas and Red River Basins. More detailed analysis of this subject is presented in the following chapter dealing with the Arkansas Red River Pollution Control.

In the Gulf-Southwest area, the Public Health Service has, after detailed study, recommended the inclusion of storage for municipal and industrial purposes in 35 existing and potential Corps of Engineers' projects which are in various stages of development. Also, the storage of water for quality control has been recommended in 19 Corps of Engineers' projects and 4 Bureau of Reclamation projects. Specific projects are listed and discussed more fully in Chapter III.

Research is receiving increased emphasis as one of the main tools in the ultimate improvement of stream quality. The Regional Water Pollution Control Laboratory at Ada, Oklahoma, to be completed in 1965, will deal with many problems of water pollution control common to the Southwest. The laboratory will support research in all phases of water supply and water quality management as outlined more definitively in Chapter IV dealing with the Southwest water pollution control research.

Incidental to an effective program of water quality management is the need for basic data. A knowledge of waste treatment facilities of both municipalities and Federal Installations in the area is essential. The 1962 inventory of all municipal waste treatment facilities in the region, has been completed by the Public Health Service in cooperation with various State Agencies. Further, an up-to-date inventory of waste water practices at Federal Installations has been completed with the assistance of other governmental agencies. These inventories reflect the latest available information on treatment practices and the data indicate the quality of effluent being discharged to the receiving stream from the treatment facility. From information assembled, recommendations are being made for improvement of treatment practices at Federal Installations. Through the efforts of the National Water Quality Network Stations, up-to-date water quality data are available at strategic points in our inter-state streams. For example, in the State of Texas, sampling stations are located at Denison on the Red River; Ruliff on the Sabine River; and El Paso, Laredo and Brownsville on the Rio Grande River. Detailed information on radioactivity, organics, plankton, chemical, and physical characteristics are available from those stations in published form. These data are presented in the tables appearing at the conclusion of Chapter V on water quality.

The Department of Health, Education, and Welfare is a member of the Arkansas-White-Red Basins Inter-Agency Committee along with six other Federal Agencies and eight states. On recommendation of this inter-agency group, an advisory committee on stream sanitation was recently formed representing all eight states and the Public Health Service. This activity is described more fully in Chapter VI.

The concluding portion of this report deals with federally aided grants program for construction of municipal sewage treatment plants. Tables in this chapter present in concise tabular form the projects completed; active projects; and the proposed projects in Region VII.

RBR - SM

CHAPTER II

ARKANSAS-RED RIVER POLLUTION CONTROL

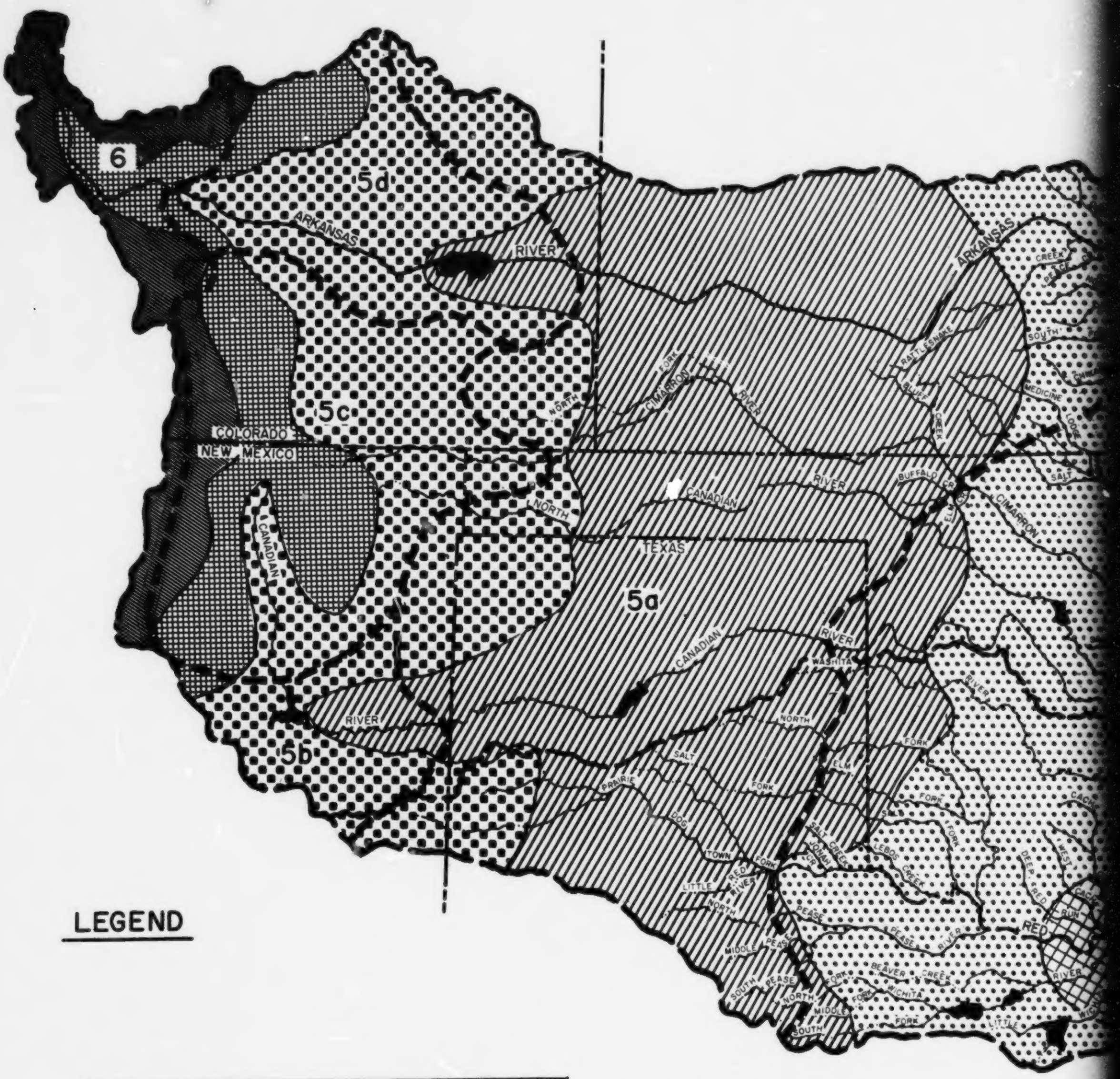
SUMMARY

The Arkansas-Red River basins are the major downstream tributaries to the Mississippi River. Drainage area of the two basins includes portions of Arkansas, Colorado, Kansas, Louisiana, New Mexico, Texas and all of Oklahoma. Pollution problems preventing optimum use of these water resources are presented. Recommendations for future control of the man-made and natural occurring chloride wastes are given.

DESCRIPTION OF EFFORT

Two of the nation's largest water resources, the Arkansas and Red Rivers, drain the northern areas of Texas, plus portions of Arkansas, Colorado, Louisiana, Kansas, New Mexico, and all of Oklahoma. Together, they drain over 254,000 square miles of the southwestern and central plains region. Geographical land forms within the basins vary from rugged mountains of over 10,000 feet in height to extensive coastal and alluvial flood plains of near sea level in elevation.

The climate ranges from humid in the east to semiarid in the west, and is characterized by long hot summers and short cold winters. Annual precipitation averages about 55 inches in southeast Arkansas and Louisiana, decreasing rather uniformly in a westward direction to less than 12 inches in the western great plains. In the great plains, both monthly and yearly average rainfall are low and result in serious moisture deficiencies for crops. Three times during the past 70 years (1892-94,


6
5d
5c
5b
5a
ARKANSAS
RIVER
COLORADO
NEW MEXICO
TEXAS
CANADIAN
NORTH
CIMARRON
FORK
RIVER
RATTLESNAKE
BLUFF
CREEK
ARKANSAS
MEDICINE
LODGE
SALT
BUFFALO
CIMARRON
WASHITA
NORTH
FORK
SALT
PRAIRIE
DOG
TOWN
FORK
ELM
LITTLE
RED
RIVER
NORTH
MIDDLE
PEASE
SOUTH
PEASE
NORTH
MIDDLE
SOUTH
BEAVER
CREEK
WICHITA
FORK
LITTLE
RED
RIVER
CACHE
DEEP
RED

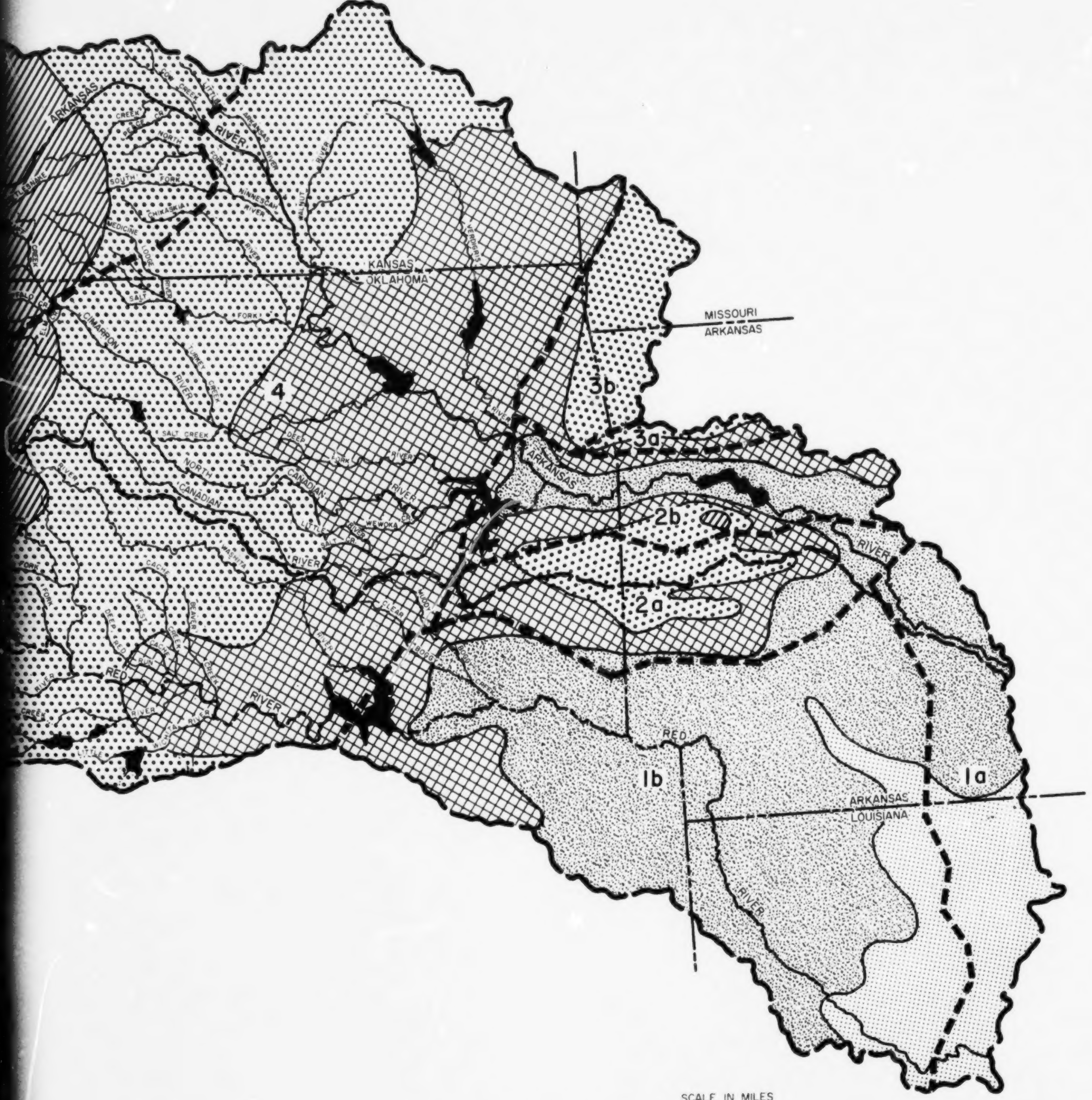
LEGEND

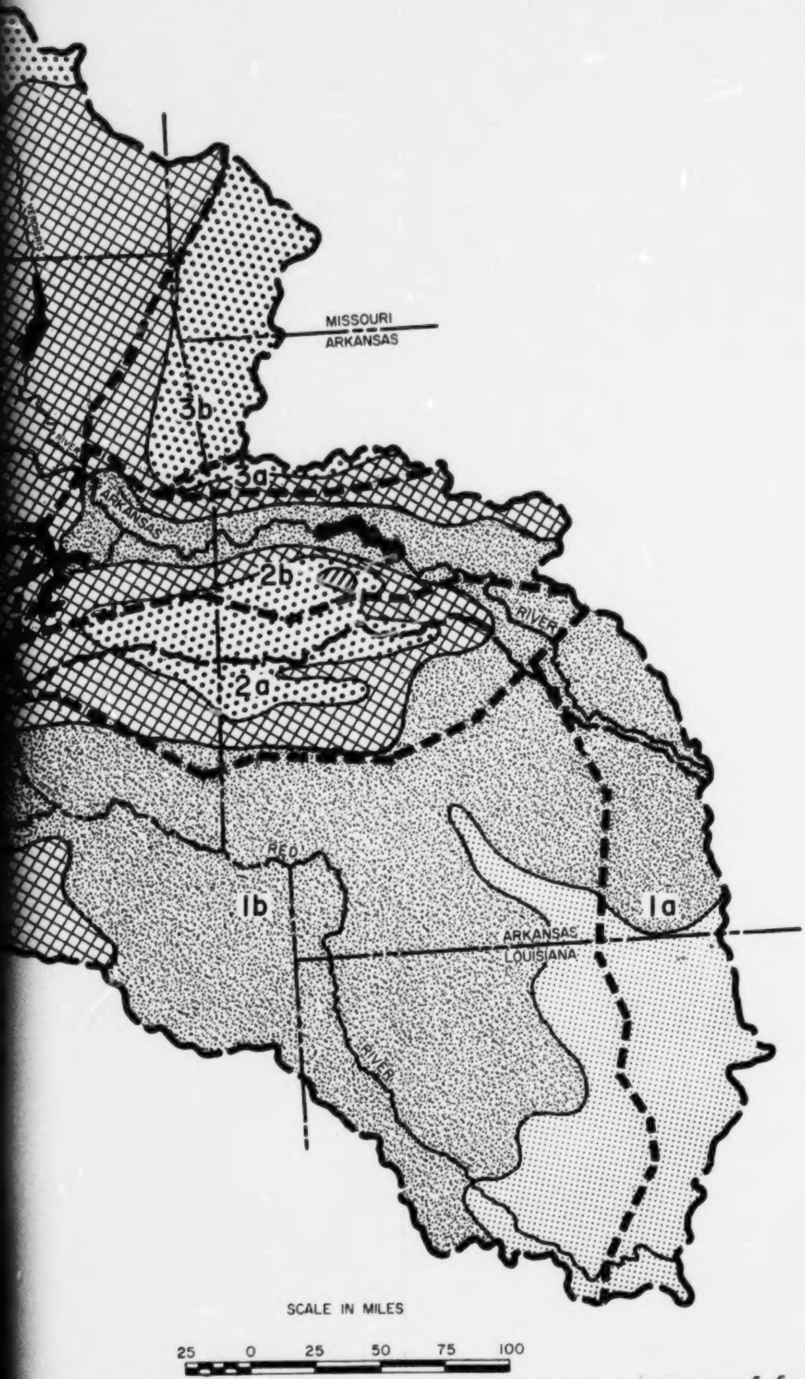
GENERAL ELEVATION

(Feet above mean sea level)

■	8000—14000+
▦	6000—8000
●	4000—6000
▨	2000—4000
⁘	1000—2000
▩	500—1000
░	100 — 500
⋯	0—100

Province	Section
1. Coastal Plain	a. Mississippi Alluvial Plain b. West Gulf Coastal Plain
2. Ouachita Province	a. Ouachita b. Arkansas Valley
3. Ozark Plateaus	a. Boston "Mountains" b. Springfield—Salem Plateaus
4. Central Lowland	a. Osage Plains
5. Great Plains Province	a. Plains b. Pecos Valley c. Raton Section d. Colorado Piedmont
6. Southern Rocky Mountains	

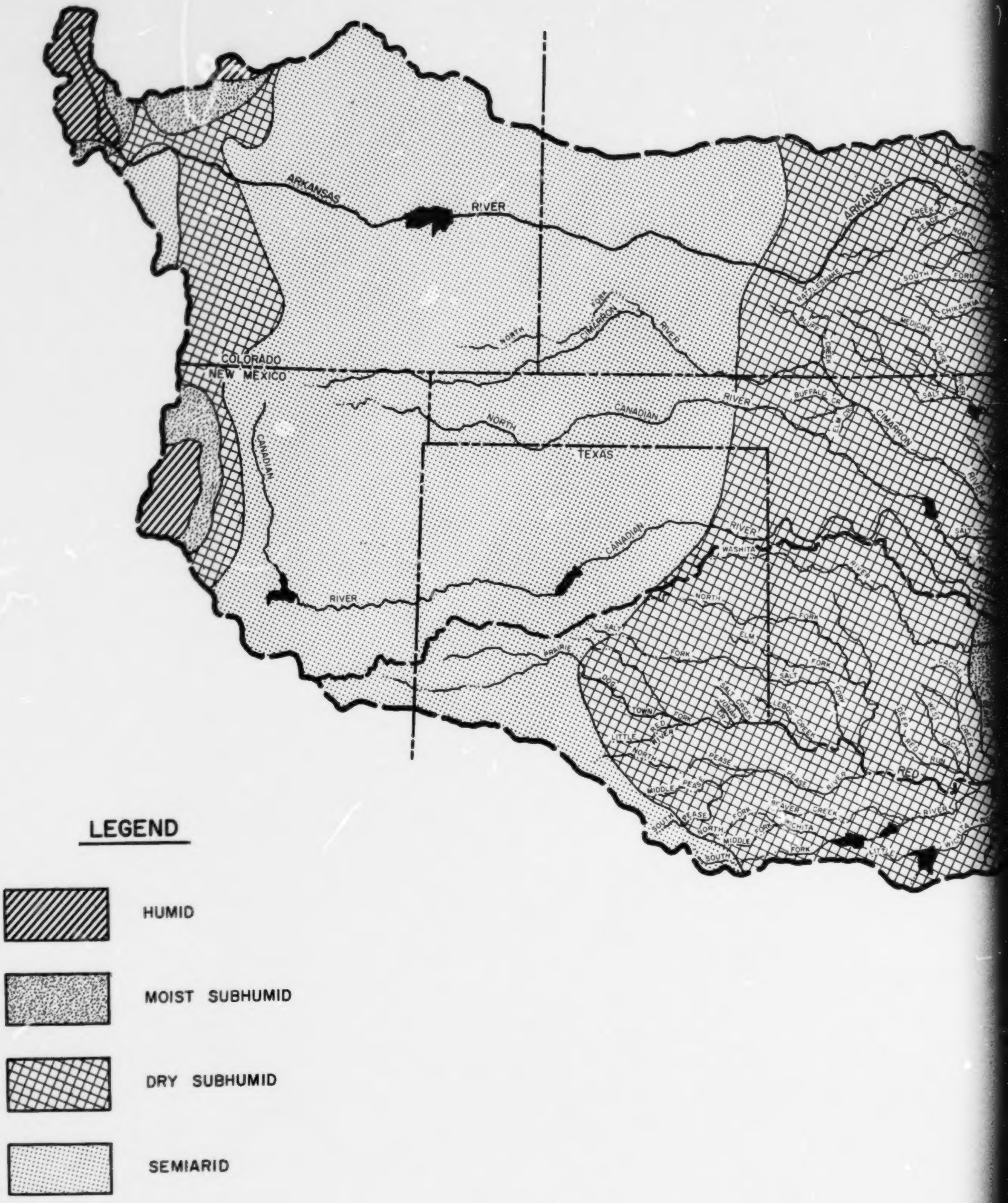

ARKANSAS
RIVER
COW CREEK
LITTLE
ARKANSAS RIVER
PEACE CR
CREEK
NORTH FORK
SOUTH FORK
NINNESCAH RIVER
WALNUT RIVER
RIVER
CHIKASKIA
MEDICINE LODGE
RIVER
CREEK
VERDIGRIS
KANSAS
OKLAHOMA
MISSOURI
ARKANSAS
SALT FORK
CR
ELM CR
CIMARRON
RIVER
TURKEY CREEK
4
3b
3a
SALT CREEK
DEEP FORK RIVER
NORTH CANADIAN
CANADIAN RIVER
LITTLE RIVER
WEWOKA CR.
SALT CR.
ARKANSAS
RIVER
2b
2a
WASHITA RIVER
CACHE
WEST
BEAVER
CREEK
DEEP RED RUN
CACHE CREEK
RED
RIVER
WICHITA RIVER
LITTLE
FORK
MUDDY
CLEAR
BOGGY
BOGGY CREEK
RED
1b
1a
ARKANSAS
LOUISIANA
RIVER
SCALE IN MILES
25 0 25 50 75 100

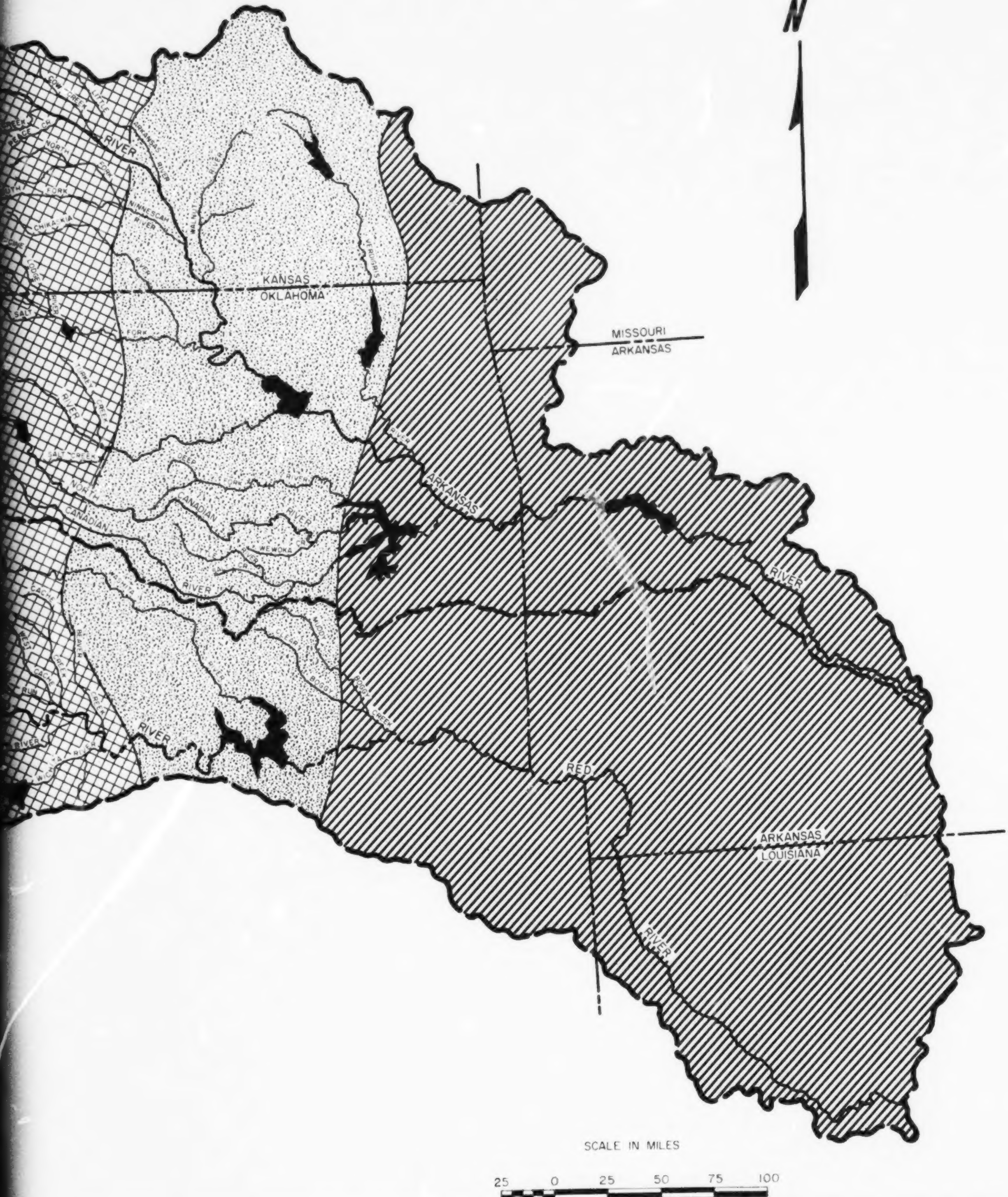

MISSOURI
ARKANSAS
3b
3a
ARKANSAS
2b
RIVER
2a
RED
1b
1a
ARKANSAS
LOUISIANA
RIVER
SCALE IN MILES
25 0 25 50 75 100

ARKANSAS—RED RIVER BASINS
WATER QUALITY CONSERVATION PROJECT

PHYSIOGRAPHIC PROVINCES and ELEVATIONS

DEPARTMENT OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION VII DALLAS, TEXAS


ARKANSAS
RIVER
NORTH FORK
CIMARRON
RIVER
COLORADO
NEW MEXICO
NORTH
CANADIAN
RIVER
TEXAS
CANADIAN
RIVER
WASHITA
RIVER
SALT
PRAIRIE
DOG
TOWN
FORK
RED
RIVER
LITTLE
NORTH
PEASE
MIDDLE
SOUTH
BEAVER
CREEK
WICHITA
ELM
BUFFALO CR
RATTLESNAKE
MEDICINE
CHIKASKIA
SOUTH
FORK
CACHE
DEEP
RED
LEGEND
HUMID
MOIST SUBHUMID
DRY SUBHUMID
SEMIARID

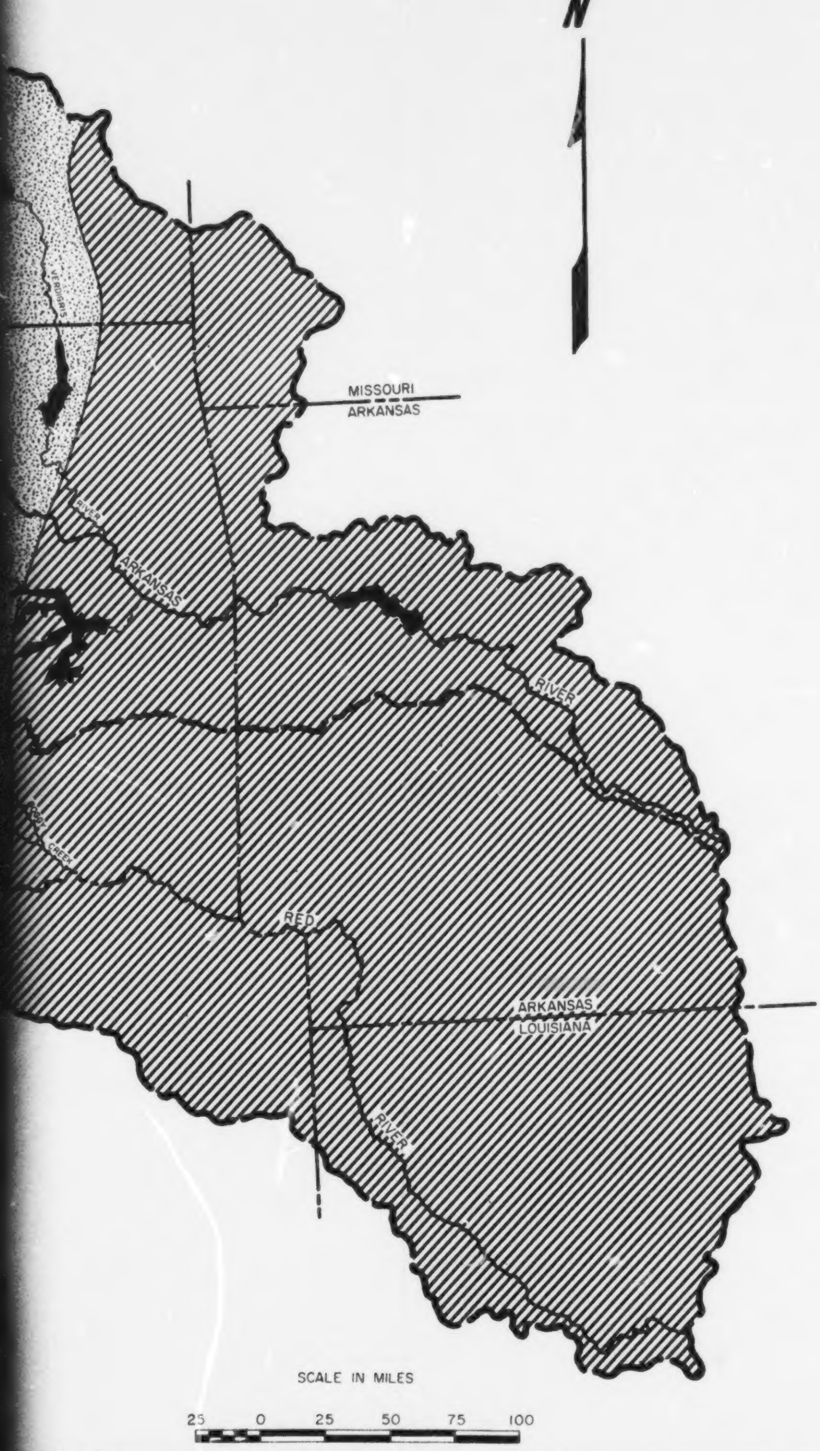

N
KANSAS
OKLAHOMA
MISSOURI
ARKANSAS
RIVER
NORTH
FORK
CANADIAN
DEEP
RIVER
ARKANSAS
RIVER
RIVER
RED
ARKANSAS
LOUISIANA
RIVER
SCALE IN MILES
25
0
25
50
75
100

ARKANSAS-
WATER QUALITY

NORMA

DEPARTMENT OF H
PUBLIC

REGION VII


N
MISSOURI
ARKANSAS
RIVER
ARKANSAS
RIVER
RED
ARKANSAS
LOUISIANA
RIVER
SCALE IN MILES
25
0
25
50
75
100

ARKANSAS—RED RIVER BASINS
WATER QUALITY CONSERVATION PROJECT

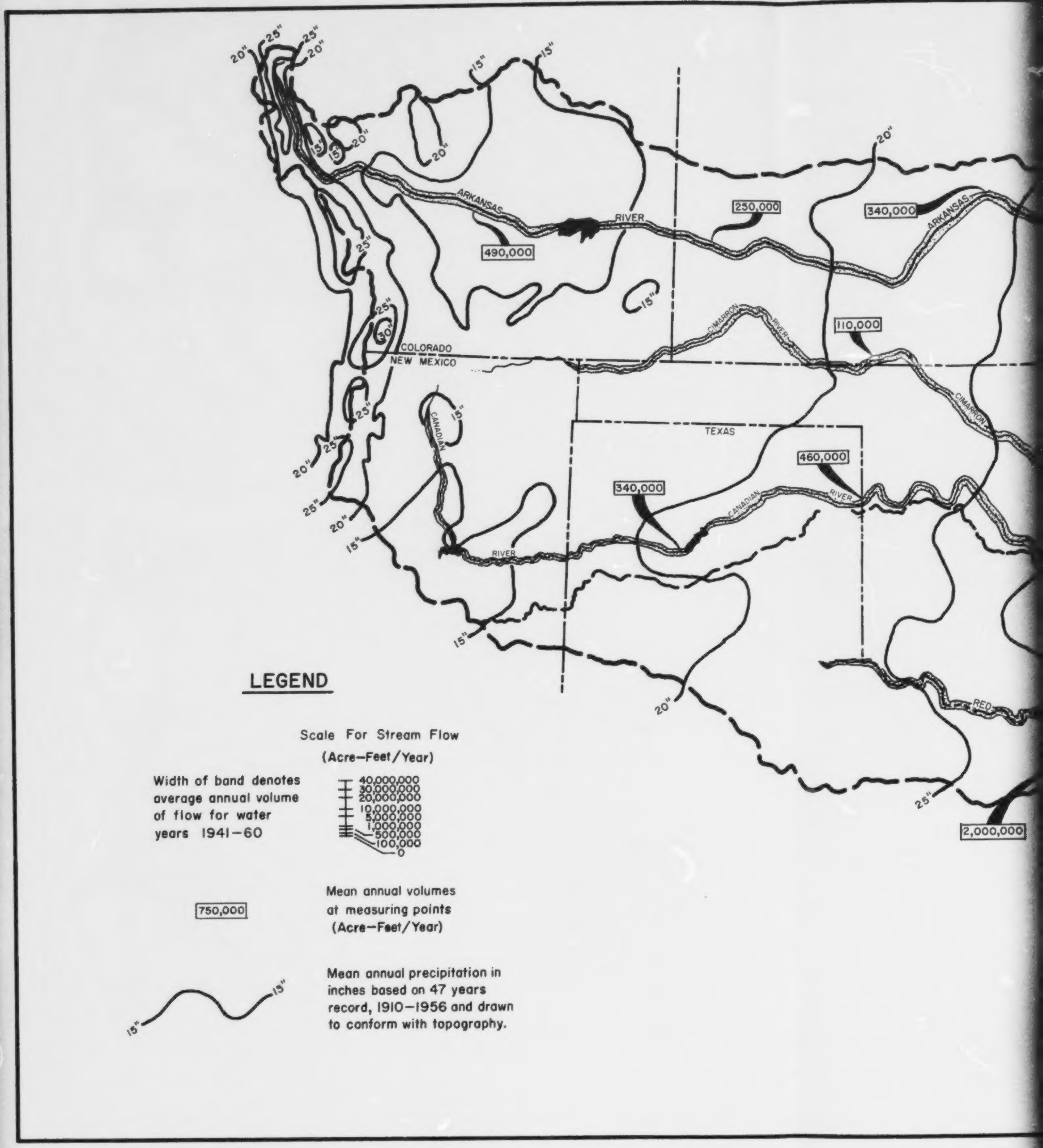
NORMAL CLIMATES

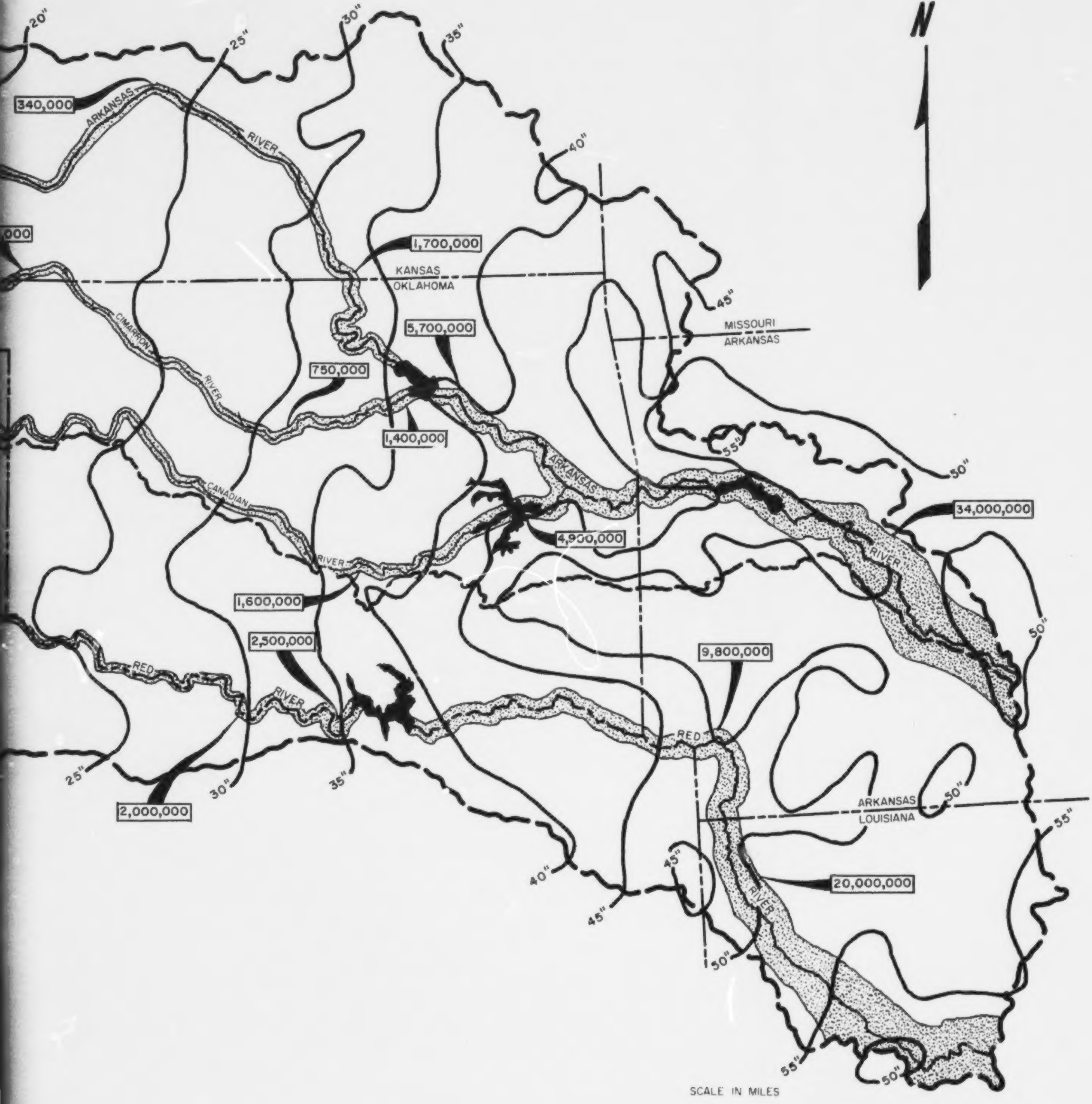
DEPARTMENT OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION VII DALLAS, TEXAS

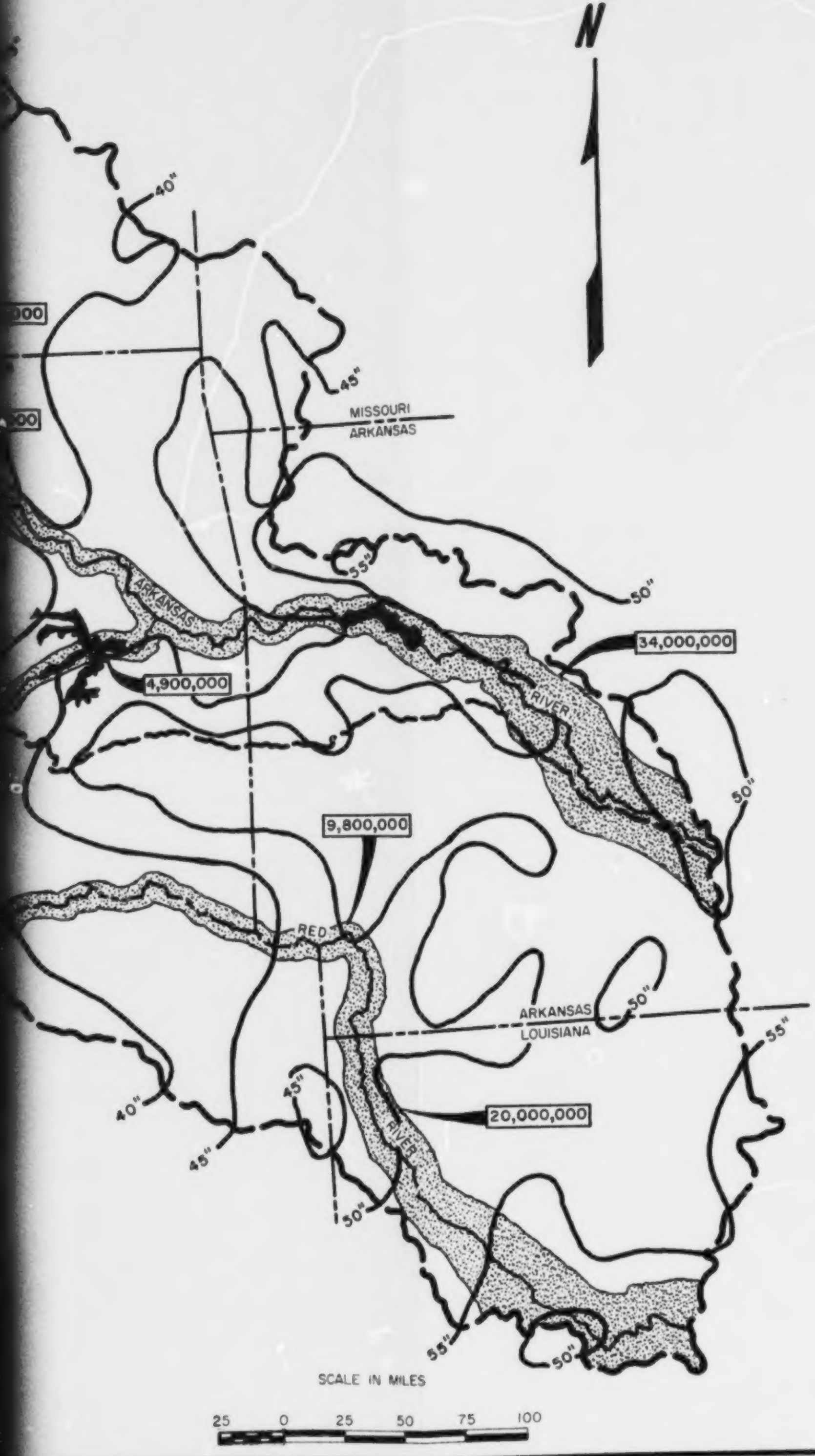
1934-36, and 1952-56) (1963 excluded), droughts have been so severe that extensive crop damage and serious water shortages have occurred.

Even during the drought years there were still large volumes of water in the two rivers. In the driest year of record (excluding 1963), the flow in the Red River near Texarkana, Texas was 2,500,000 acre-feet. The Arkansas River carried over six million acre-feet of water past Little Rock, Arkansas during its record year of low flow. Tables I and II show comparisons of average conditions at selected points in the river basins and minimum flow observed. Unfortunately, much of the waters in these two basins are unusable because of gross mineral pollution caused by natural and man-made waste. The poor quality resulting from natural pollution was recorded in the diaries of early explorers traveling in the region. In 1840, Josiah Gregg gives an apt description of the upper Red River basin by stating "one of the greatest defects of this country is the great natural scarcity of water because of the almost absolute lack of springs; wherefore, even the largest creeks stop running during dry weather, and the inhabitants are all constrained to use of water from standing pools which is generally very bad". Other explorers tell of salt deposits and plaster of Paris accumulations on intermittent flowing streams.

Recognition for the necessity of establishing water quality information in these two major drainage regions existed as early as 1906. Sample of waters were taken for chemical analyses from the Arkansas River on a weekly basis during that year at Deerfield, Great Bend, and Arkansas City, Kansas. Institution of investigations of the water

20"
25"
25"
20"
15"
15"
15"
15"
20"
20"
20"
ARKANSAS
RIVER
490,000
250,000
340,000
ARKANSAS
25"
25"
30"
15"
CIMARRON
RIVER
110,000
COLORADO
NEW MEXICO
CIMARRON
25"
25"
20"
25"
CANADIAN
15"
TEXAS
460,000
340,000
CANADIAN
RIVER
20"
15"
RIVER
15"
20"
RED
25"
2,000,000
LEGEND
Scale For Stream Flow
(Acre-Feet/Year)
Width of band denotes
average annual volume
of flow for water
years 1941-60
40,000,000
30,000,000
20,000,000
10,000,000
5,000,000
1,000,000
500,000
100,000
0
750,000
Mean annual volumes
at measuring points
(Acre-Feet/Year)
15"
15"
Mean annual precipitation in
inches based on 47 years
record, 1910-1956 and drawn
to conform with topography.


N
20"
25"
30"
35"
40"
45"
340,000
ARKANSAS
RIVER
000
1,700,000
KANSAS
OKLAHOMA
MISSOURI
ARKANSAS
5,700,000
750,000
CIMARRON
RIVER
1,400,000
55"
50"
ARKANSAS
CANADIAN
RIVER
4,900,000
34,000,000
RIVER
1,600,000
2,500,000
9,800,000
50"
RED
RIVER
RED
25"
30"
35"
2,000,000
ARKANSAS
LOUISIANA
50"
55"
45"
40"
45"
20,000,000
RIVER
50"
55"
50"
SCALE IN MILES
25
0
25
50
75
100


N
40"
45"
MISSOURI
ARKANSAS
55"
50"
34,000,000
ARKANSAS
RIVER
4,900,000
50"
9,800,000
RED
RIVER
ARKANSAS
LOUISIANA
50"
55"
20,000,000
40"
45"
45"
50"
55"
50"
SCALE IN MILES
25 0 25 50 75 100

ARKANSAS—RED RIVER BASINS
WATER QUALITY CONSERVATION PROJECT

RAINFALL AND STREAM FLOW

DEPARTMENT OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION VII DALLAS, TEXAS

TABLE I - RED RIVER BASIN
COMPARISON OF LONG TERM AVERAGE AND MINIMUM OBSERVED FLOWS

Location	Years of Recorded Flow	Average Flow Per Year cfs*	Minimum Flow in One Year cfs*
Red River near Brice, Texas	7	85	19
Salt Fork of Red River at Mangum, Okla.	25	97	12
North Fork of Red River near Carter, Okla.	17	136	22
North Fork of Red River near Headrick, Okla.	27	348	32
Cache Creek near Walters, Okla.	23	181	13
Wichita River at Wichita Falls, Texas	25	324	83
Red River near Terral, Okla.	24	2570	911
Red River near Gainesville, Texas	26	3170	651
Washita River near Durwood, Okla.	34	1530	391
Red River near Colbert, Okla. (Denison Dam)	39	5200	344
Clear Boggy Creek near Caney, Okla.	19	509	54
Red River at Arthur City, Texas	32	8670	2480
Red River at Index, Okla.	26	12,700	4840
Beaver Creek near Waurika, Okla.	8	154	39
Salt Fork of Red River near Wellington, Texas	8	93	46
Little Wichita River near Henrietta, Texas	9	134	51

* cfs = cubic feet per second

TABLE II. ARKANSAS RIVER BASIN
COMPARISON OF LONG TERM AVERAGE AND MINIMUM OBSERVED FLOWS

Location	Years of Recorded Flow	Average Flow Per Year cfs*	Minimum Flow in One Year cfs*
Verdigris River near Inola, Okla.	18	4490	297
Canadian River at Logan, New Mexico	34	308	23
Canadian River near Amarillo, Texas	24	463	92
Canadian River near Canadian, Texas	24	590	64
Canadian River near Bridgeport, Okla.	18	506	107
Little River near Tecumseh, Okla.	18	163	35
Little River near Sasakwa, Okla.	20	440	50
Canadian River near Calvin, Okla.	23	1970	393
N. Canadian River near Oklahoma City, Okla.	16	380	56
N. Canadian River near Wetumka, Okla.	25	771	156
Deep Fork near Beggs, Okla.	24	910	114
Canadian River near Whitefield, Okla.	24	6170	980
Arkansas River near Van Buren, Ark.	35	32,300	3470
N. Canadian River below Lake Overholser, Okla.	10	149	0.4

TABLE II. ARKANSAS RIVER BASIN (CONT'D)
COMPARISON OF LONG TERM AVERAGE AND MINIMUM OBSERVED FLOWS

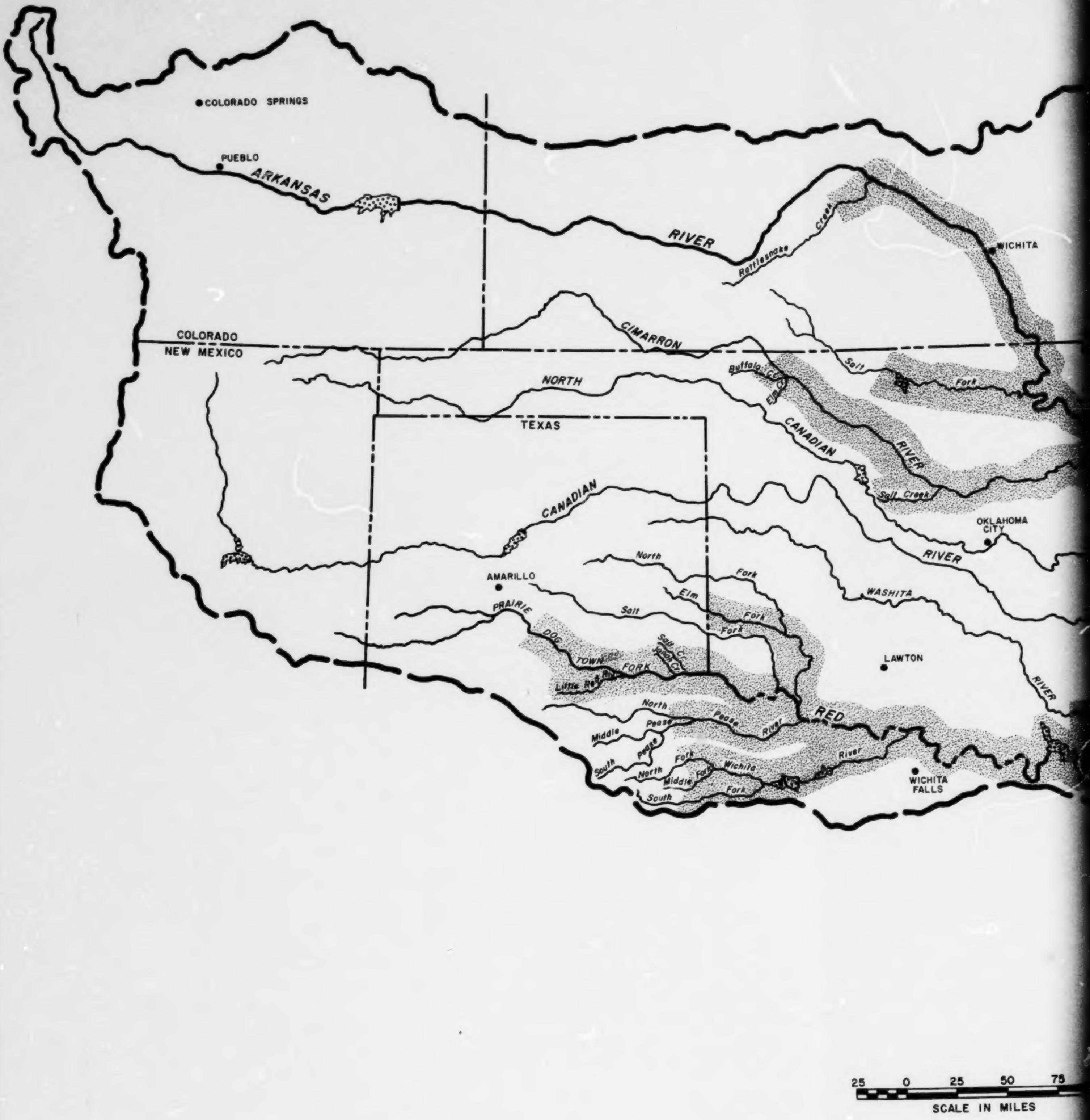
Location	Years of Recorded Flow	Average Flow Per Year cfs*	Minimum Flow in One Year cfs*
Arkansas River near Haskell, Okla.	37	6740	1280
Salt Fork of Arkansas River near Ingersoll, Okla.	11	366	90

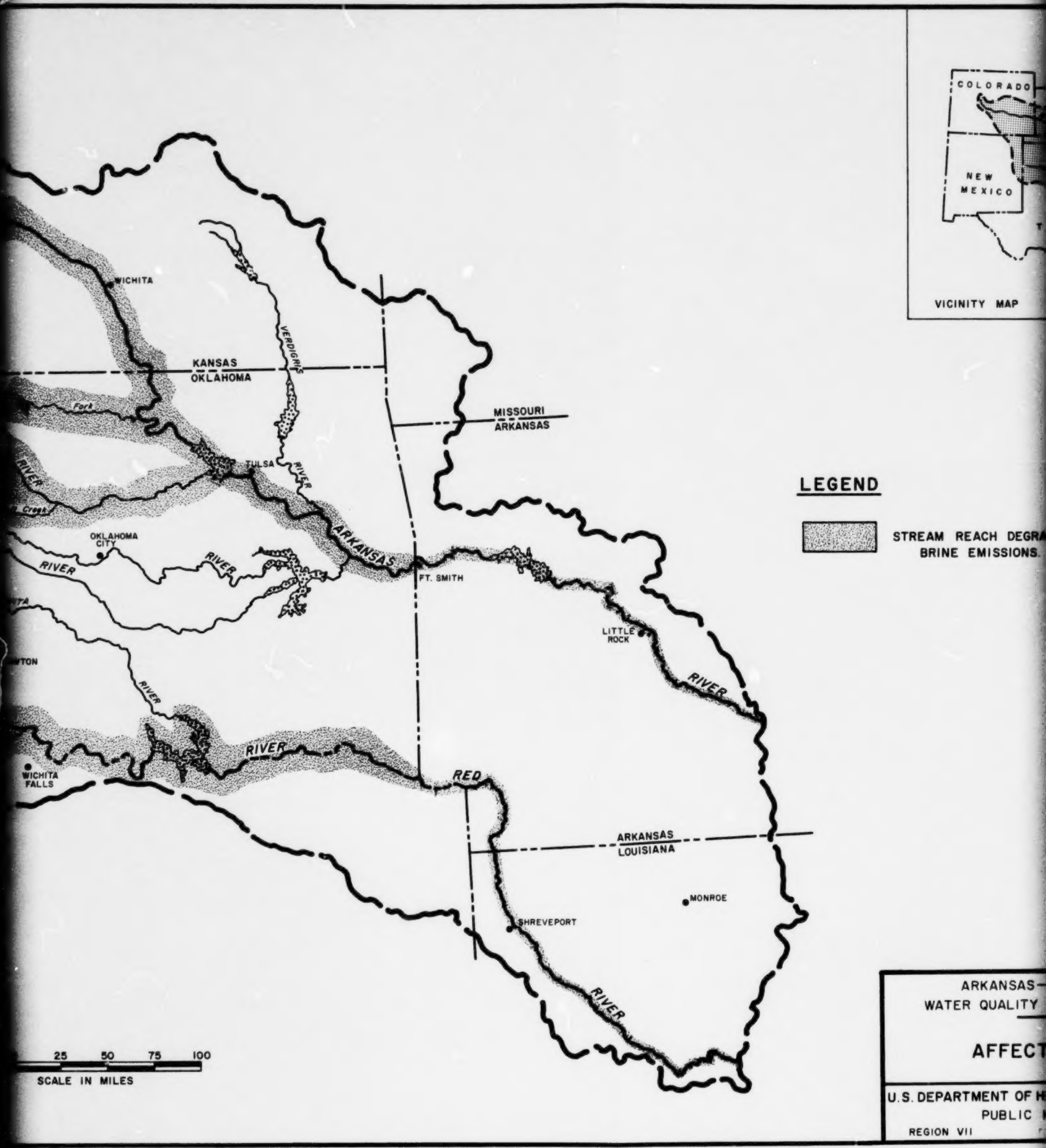
*cfs = cubic feet per second

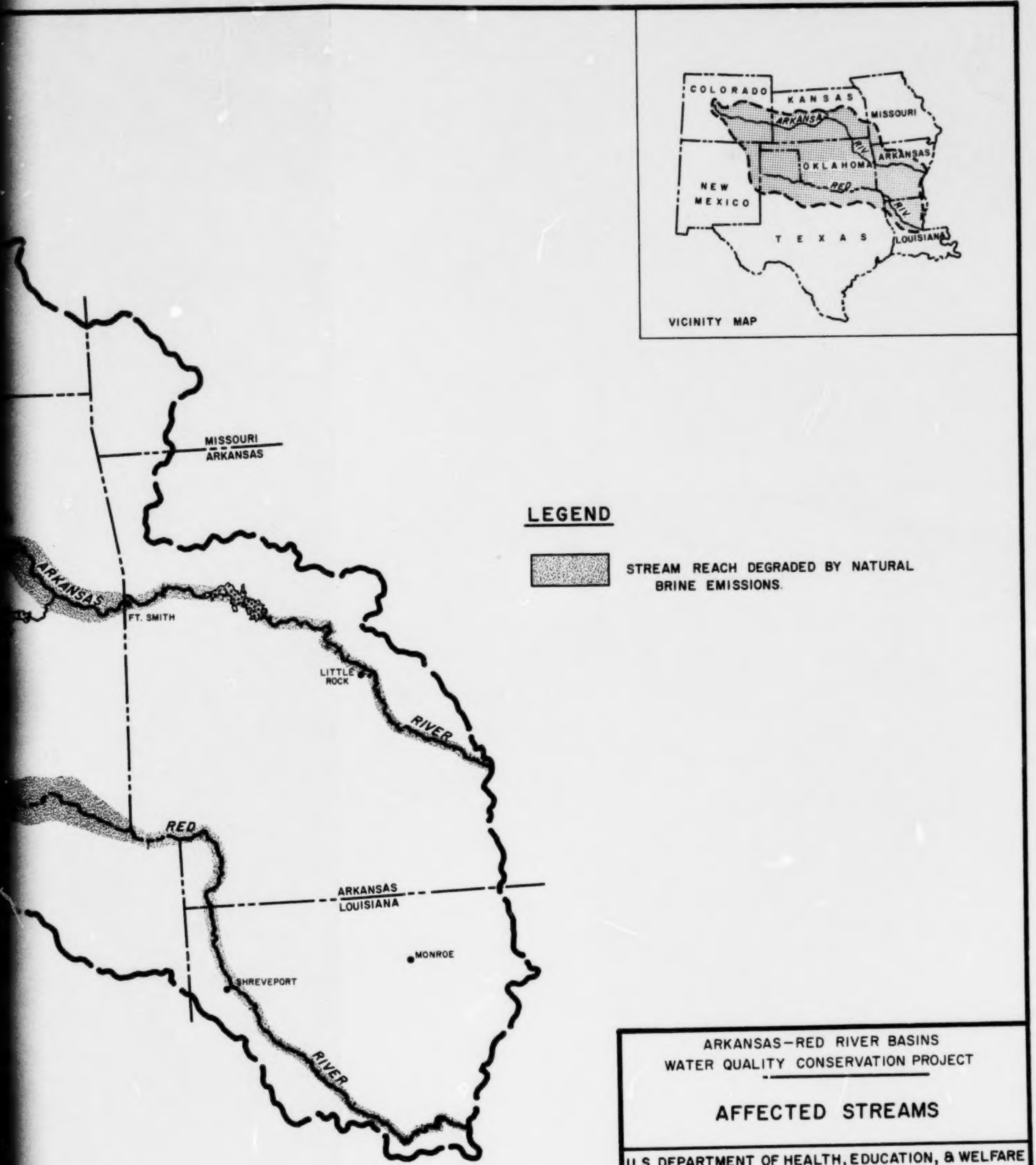
characteristics in other reaches of the Arkansas-Red River and tributaries was of more recent origin dating largely from the end of World War II. Reports of a number of the findings have been published in technical publications by the persons or agencies involved. Those contributing particularly to the early effort were state and federal agencies.

During the period July 1, 1957 through February, 1958, the Public Health Service canvassed private and commercial sources, local, state, and federal governmental agencies for published and unpublished water quality and quantity information for this area. Special attention was given to analytical results representing daily sampling at a stream site for a year or more. Stream stations in the Arkansas-Red River basins were eventually tabulated and published.

Study of the tabulated data revealed the major mineral pollutants to be sodium chloride and calcium sulfate. (Sufficient data existed prior to this study to indicate drastic impairment of these waters at specific points in the basins which restricted or prevented the use of this water for municipal, industrial and/or agricultural purposes.) Sodium chloride was considered the most significant contaminant because of its widespread occurrence in objectionable concentrations, and its non-degradable chemical characteristics. Further consideration of the data revealed the significant mineral loads were being contributed mostly over a limited segment of the two basins. The important segment on the Arkansas River appeared to lie between Van Buren, Arkansas and Great Bend, Kansas. The drainage area of Red River upstream from


COLORADO SPRINGS
PUEBLO
ARKANSAS
RIVER
Rattlesnake Creek
WICHITA
COLORADO
NEW MEXICO
CIMARRON
Salt
Fork
Buffalo Cr.
Elm
NORTH
TEXAS
CANADIAN
RIVER
Salt Creek
OKLAHOMA CITY
CANADIAN
RIVER
AMARILLO
North
Fork
Elm
Fork
Salt
Fork
WASHITA
PRAIRIE
DOG
TOWN
FORK
Salt C.
Little Red R.
LAWTON
RIVER
North
Pease
Middle
Pease
River
RED
South
Pease
North
Fork
Middle
Fork
Wichita
South
Fork
River
WICHITA FALLS
25
0
25
50
75
SCALE IN MILES


COLORADO
NEW MEXICO
VICINITY MAP
LEGEND
STREAM REACH DEGRA
BRINE EMISSIONS.
WICHITA
KANSAS
OKLAHOMA
VERDIGRIS
RIVER
MISSOURI
ARKANSAS
Fork
TULSA
RIVER
Creek
OKLAHOMA CITY
RIVER
RIVER
ARKANSAS
FT. SMITH
LITTLE ROCK
RIVER
RIVER
RIVER
WICHITA FALLS
RED
ARKANSAS
LOUISIANA
MONROE
SHREVEPORT
RIVER
25 50 75 100
SCALE IN MILES
ARKANSAS-
WATER QUALITY
AFFECT
U.S. DEPARTMENT OF H
PUBLIC
REGION VII

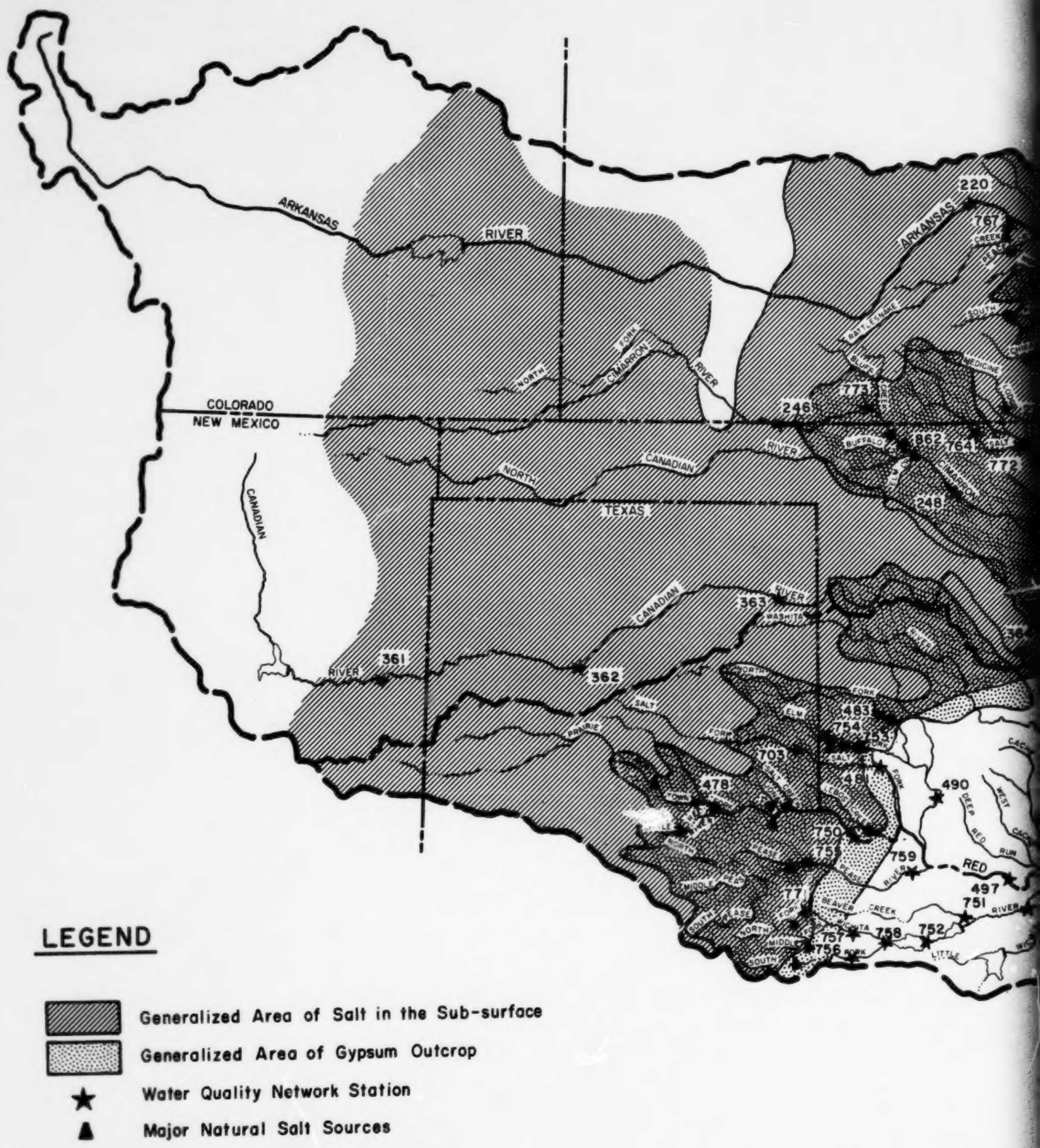

COLORADO
KANSAS
MISSOURI
ARKANSAS
RIV
OKLAHOMA
ARKANSAS
NEW MEXICO
RED
RIV
TEXAS
LOUISIANA
VICINITY MAP
LEGEND
STREAM REACH DEGRADED BY NATURAL BRINE EMISSIONS.
MISSOURI
ARKANSAS
ARKANSAS
FT. SMITH
LITTLE ROCK
RIVER
RED
ARKANSAS
LOUISIANA
MONROE
SHREVEPORT
RIVER

ARKANSAS–RED RIVER BASINS
WATER QUALITY CONSERVATION PROJECT

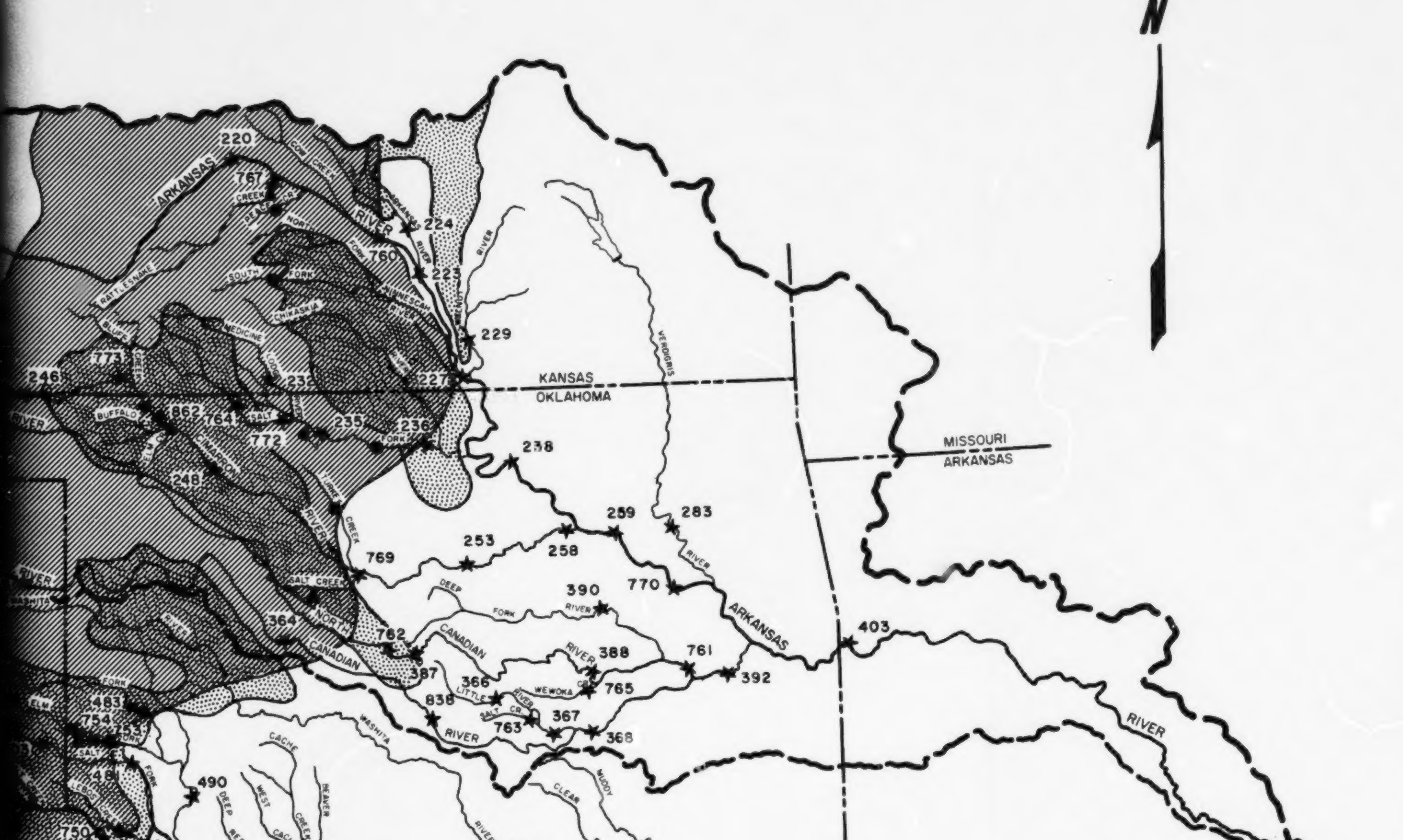
AFFECTED STREAMS

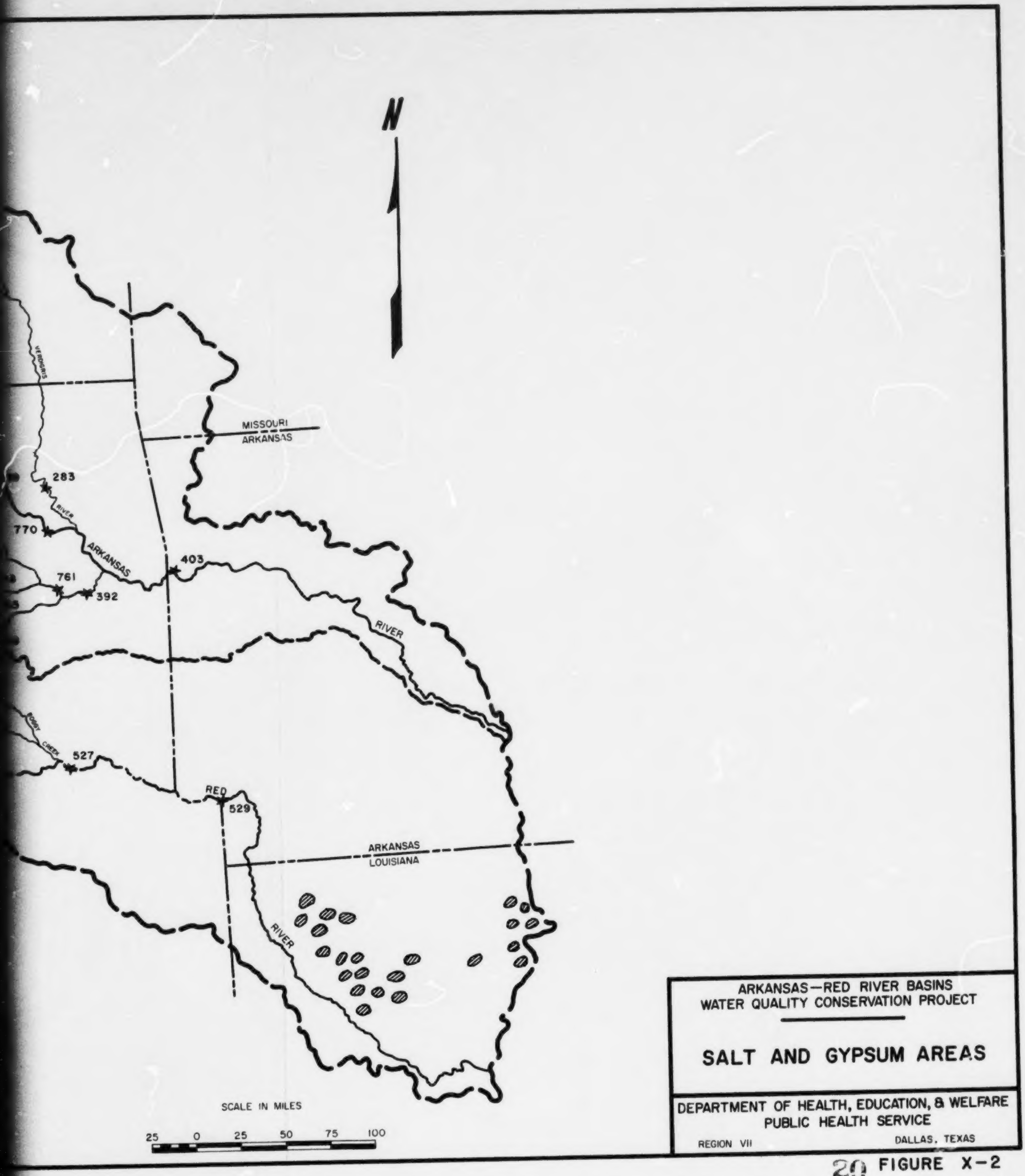
U.S. DEPARTMENT OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION VII DALLAS, TEXAS

FIGURE ~~IX-1~~ VI-2



ARKANSAS
RIVER
NORTH
FORK
CIMARRON
RIVER
COLORADO
NEW MEXICO
CANADIAN
NORTH
CANADIAN
RIVER
TEXAS
CANADIAN
RIVER
WASHITA
RIVER
SALT
PRAIRIE
FORK
ELM
NORTH
MIDDLE
SOUTH
PEASE
BEAVER
CREEK
DEEP
RED
RUN
WEST
CACHE
RED
RIVER
LITTLE
RATTLESNAKE
BLUFF
MEDICINE
SOUTH
BUFFALO
SALT
220
767
246
773
862
764
772
248
363
361
362
483
754
753
703
48
478
490
750
75
759
497
751
77
757
756
758
752
LEGEND
▨ Generalized Area of Salt in the Sub-surface
▒ Generalized Area of Gypsum Outcrop
★ Water Quality Network Station
▲ Major Natural Salt Sources
● Secondary Natural Salt Sources


N
ARKANSAS
RIVER
KANSAS
OKLAHOMA
MISSOURI
ARKANSAS
ARKANSAS
LOUISIANA
VERDIGRIS
RIVER
ARKANSAS
RIVER
CANADIAN
RIVER
NORTH
CANADIAN
DEEP
FORK
LITTLE
RIVER
WEWOKA
SALT CR.
WASHITA
RIVER
CACHE
CREEK
BEAVER
CREEK
WEST
DEEP
RED
RUN
RED
RIVER
CLEAR
MUDDY
BOGGY
CREEK
WICHITA
RIVER
LITTLE
RED
RIVER
RATTLESNAKE
SOUTH
FORK
NORTH
CHIKASKIA
MEDICINE
BUFFALO
CIMARRON
SALT
SALT CREEK
ELM
220
767
224
760
223
229
773
246
227
862
764
772
235
236
248
238
259
283
253
258
769
770
390
364
762
387
388
761
392
403
366
765
838
367
763
368
483
754
490
750
759
500
700
497
751
503
520
526
527
507
508
522
529
757
758
752
756
704
SCALE IN MILES
25
0
25
50
75
100


N
VERDIGRIS
MISSOURI
ARKANSAS
283
RIVER
770
ARKANSAS
403
761
392
RIVER
CREEK
527
RED
529
ARKANSAS
LOUISIANA
RIVER
SCALE IN MILES
25
0
25
50
75
100

ARKANSAS—RED RIVER BASINS
WATER QUALITY CONSERVATION PROJECT

SALT AND GYPSUM AREAS

DEPARTMENT OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION VII DALLAS, TEXAS

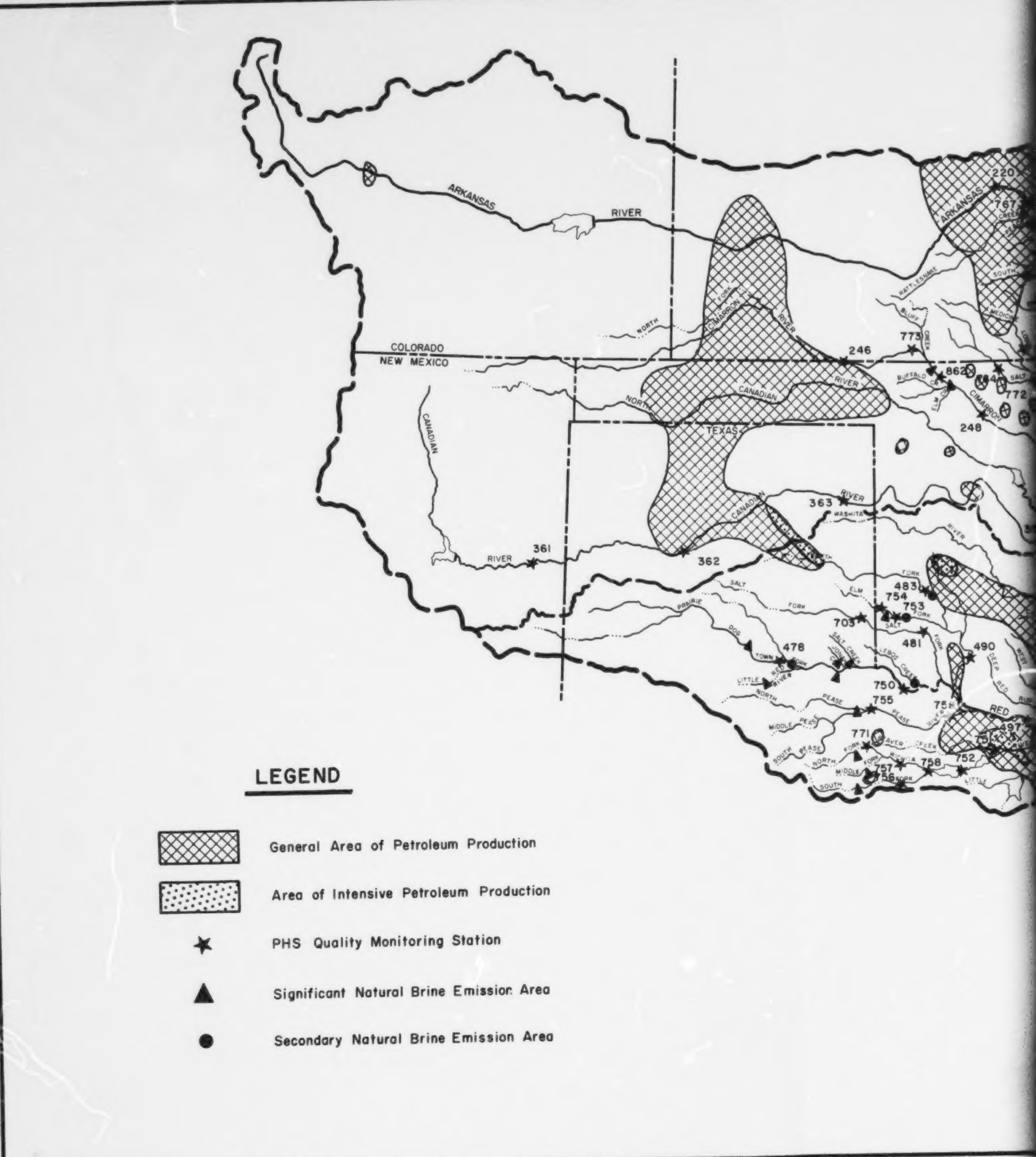
FIGURE X-2

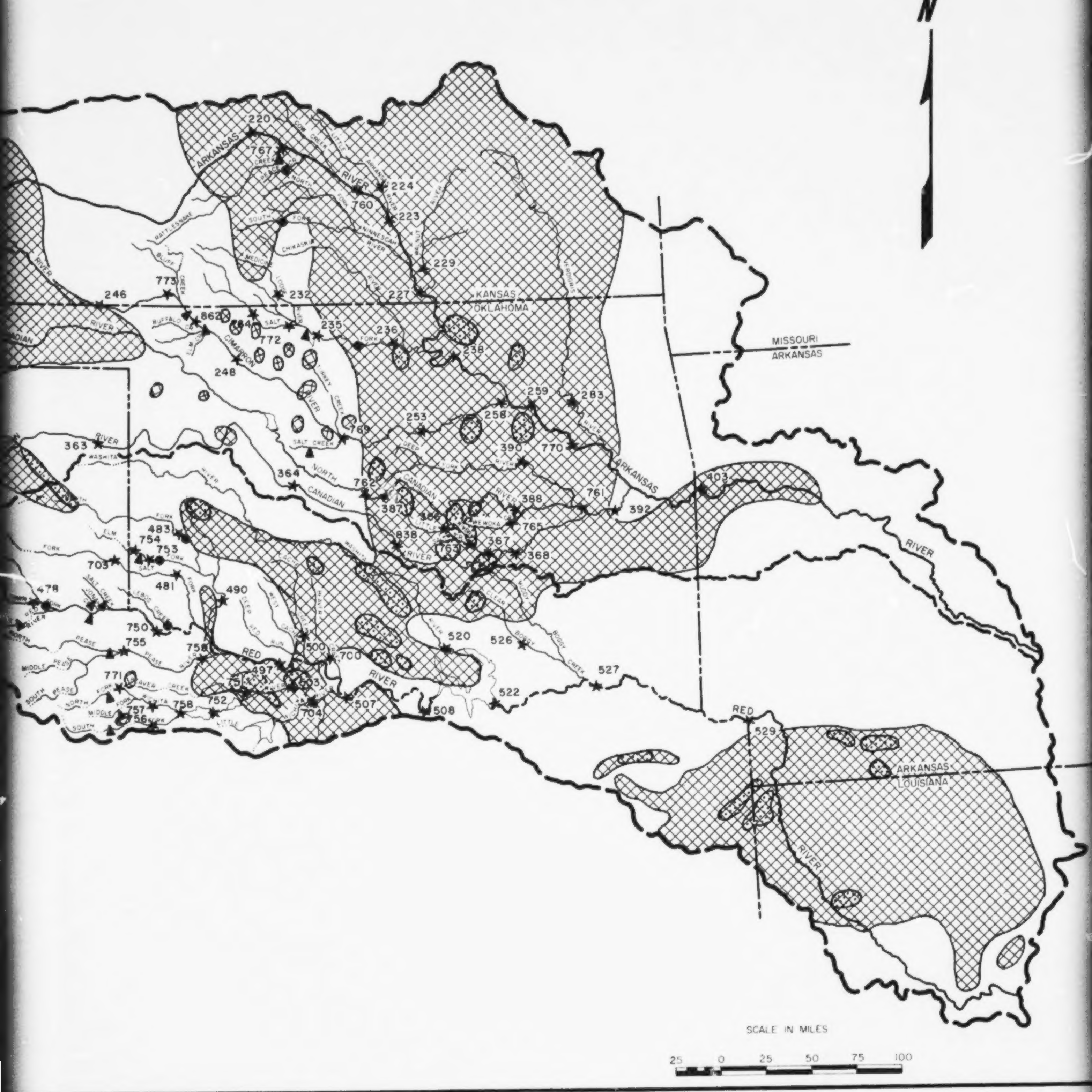
the Arkansas-Louisiana-Texas state line contained the major sources for this basin. (See map, Fig. VI-2, Affected Streams.) An intensive effort was made by the Public Health Service to determine the significant sources of man-made and natural pollution occurring within the limits identified above during the two-year period--1961 and 1962. Means of accomplishing this objective was by establishing a system of basin monitoring stations supplemented by field reconnaissance (see map, Salt Pollution Areas and Monitoring Stations).

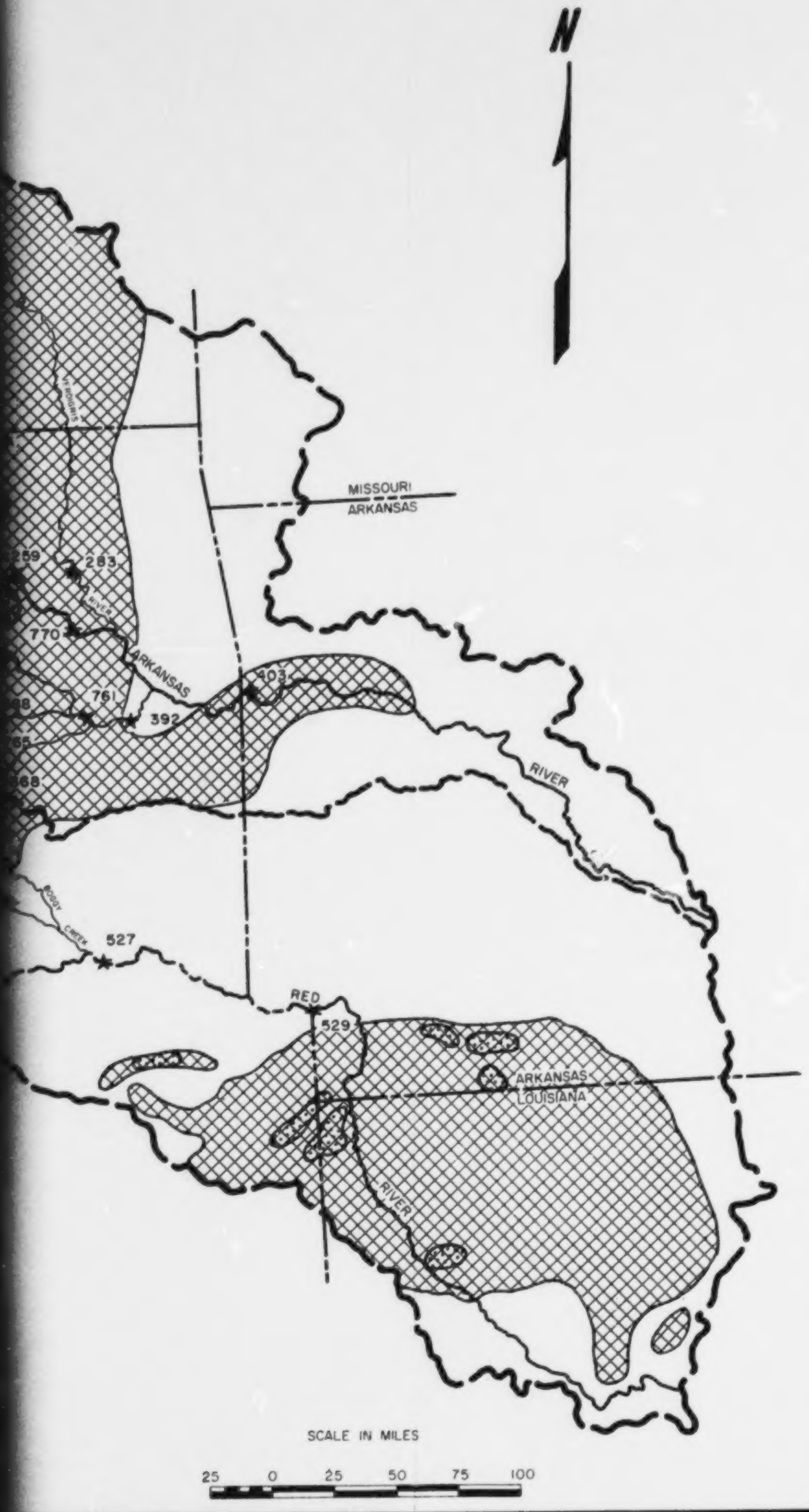
FINDINGS AND ACCOMPLISHMENTS

Tables III, Red River Basin Water Quality Data, Water Year 1961-1962, and IV, Arkansas River Basin Water Quality Data, Water Years 1961-1962, present the average flow and quality-quantity characteristics of the study areas monitored. Average chloride concentrations in the Red River basin exceeded 250 milligrams per liter at all monitoring sites upstream from Lake Texoma's reservoir, with the exception of Beaver Creek, Cache Creek, and Salt Fork of the Red River. High average chloride concentrations were also noted at selected sites on the Arkansas River, particularly on the Cimarron, Salt Fork of the Arkansas, Rattlesnake Creek, Salt Creek of the Cimarron, and Little River.

Although average concentrations of the mineralization was high in many portions of the two basins, there were also large volumes of good quality water at selected points. Tables V and VI show two million acre-feet of good quality water were available from the Red River near Index, Arkansas and over seven million acre-feet from the Arkansas River


ARKANSAS
RIVER
COLORADO
NEW MEXICO
TEXAS
NORTH FORK CIMARRON RIVER
CANADIAN RIVER
NORTH CANADIAN
CANADIAN
RATTLESNAKE
BLUFF CREEK
BUFFALO CR
SALT
CIMARRON
ELM
MEDICINE
SOUTH
WASHITA
RIVER
SALT FORK
ELM FORK
PRAIRIE DOG TOWN FORK RED RIVER
LITTLE RED RIVER
NORTH PEASE
MIDDLE PEASE
SOUTH PEASE
PEASE RIVER
BEAVER CREEK
WICHITA
NORTH FORK
MIDDLE FORK
SOUTH FORK
LITTLE
SALT CREEK
LEBOS CREEK
DEEP RED RUN
RED
220
767
246
773
862
772
248
361
362
363
483
754
753
703
481
490
478
750
755
771
757
756
758
752
497
LEGEND
General Area of Petroleum Production
Area of Intensive Petroleum Production
PHS Quality Monitoring Station
Significant Natural Brine Emission Area
Secondary Natural Brine Emission Area


N
ARKANSAS
RIVER
220
767
224
760
223
229
227
232
246
773
862
764
772
235
236
238
248
259
283
253
258
390
770
363
364
769
762
387
386
838
763
367
368
388
765
761
392
403
483
754
753
703
478
481
490
750
755
758
771
757
756
752
497
503
500
700
704
507
508
520
526
522
527
529
KANSAS
OKLAHOMA
MISSOURI
ARKANSAS
ARKANSAS
LOUISIANA
RATTLESNAKE
BUFFALO
CIMARRON
SALT CREEK
CANADIAN
NORTH
WASHITA
RED
ELM
FORK
SALT
PEASE
MIDDLE
SOUTH
NORTH
BEAVER CREEK
LITTLE
DEEP
CLEAR
BOGGY
CREEK
MEDICINE
CHIKASKIA
NINNESCAH
WALNUT
VERDIGRIS
TURKEY CREEK
SCALE IN MILES
25
0
25
50
75
100


N
VERDIGRIS
MISSOURI
ARKANSAS
259
283
RIVER
770
ARKANSAS
403
761
392
RIVER
BOGGY
CREEK
527
RED
529
ARKANSAS
LOUISIANA
RIVER
SCALE IN MILES
25
0
25
50
75
100

ARKANSAS—RED RIVER BASINS
WATER QUALITY CONSERVATION PROJECT

SALT POLLUTION AREAS AND MONITORING STATIONS

DEPARTMENT OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION VII DALLAS, TEXAS

TABLE III. RED RIVER BASIN WATER QUALITY DATA
WATER YEAR 1961 - 1962

PHS Sta. No.	Location	Avg. Flow (cfs)	Concentration (mg/l)		Load (Tons/Day)	
			Chlorides	Sulfates	Chlorides	Sulfates
478	Red River near Brice, Texas	71	950	909	182	174
481	Salt Fork Red River at Mangum, Okla.	124	117	624	39	209
483*	North Fork Red River near Carter, Okla.	312	182	471	153	395
490	North Fork Red River near Headrick, Okla.	508	480	307	656	420
497	Red River near Burkburnett, Texas	1,290	932	562	3,250	1,960
500*	Cache Creek near Walters, Ckla.	146	33	43	13	17
503	Wichita River at Wichita Falls, Texas	286	664	264	513	204
507	Red River near Terral, Okla.	2,420	608	351	3,956	2,284
508	Red River near Gainesville, Texas	2,820	548	311	4,160	2,360
520	Washita River near Durwood, Okla.	1,240	48	173	161	579
522	Red River near Colbert, Okla. (Denison Dam)	4,190	413	284	4,670	3,210
526*	Clear Boggy Creek near Caney, Okla.	337	52	59	47	54
527	Red River at Arthur City, Texas	7,080	256	179	4,880	3,420
529	Red River at Index, Okla.	10,500	173	126	4,904	3,570

TABLE III. RED RIVER BASIN WATER QUALITY DATA (CONT'D)

PHS Sta. No.	Location	Avg. Flow (cfs)	Concentration (mg/1)		Load (Tons/Day	
			Chlorides	Sulfates	Chlorides	Sulfates
700*	Beaver Creek near Waurika, Okla.	74	81	133	16	27
703*	Salt Fork Red River near Wellington, Texas	127	157	728	54	250
704	Little Wichita River near Henrietta, Texas=	78	87	19	18	4
750	Red River near Quanah, Texas	235	2,460	1,210	1,560	770
751	Beaver Creek of Wichita River near Electra, Texas	92	314	36	78	9
752	Wichita River below Lake Kemp, Texas	169	923	572	423	262
753	Elm Fork of North Fork Red River near Carl, Okla.	54	2,300	1,340	336	195
754	Elm Fork of North Fork Red River at Salton Crossing, Okla.	54	588	1,240	86	181
755	Pease River near Childress, Texas	89	1,612	603	387	145
756	South Fork of Wichita River near Benjamin, Texas	54	1,340	1,050	195	153
757	North Fork of Wichita River near Truscott, Texas	52	1,750	1,110	244	155
758	Wichita River near Seymour, Texas	218	814	596	479	350

TABLE III. RED RIVER BASIN WATER QUALITY DATA (CONT'D)

PHS Sta. No.	Location	Avg. Flow (cfs)	Concentration (mg/l)		Load (Tons/Day)	
			Chlorides	Sulfates	Chlorides	Sulfates
759	Pease River near Vernon, Texas	155	689	617	289	259
771*	North Fork of Wichita River near Paducah, Texas	15	4,620	1,510	188	61

* Denotes one year or less of quality data
(cfs) - Cubic feet per second
Avg. - Average
Mg/l - Milligrams per liter

TABLE IV. ARKANSAS RIVER BASIN WATER QUALITY DATA
WATER YEAR 1961 - 1962

PHS Sta. No.	Location	Avg. Flow (cfs)	Concentration (mg/1)		Load (Tons/Day)	
			Chlorides	Sulfates	Chlorides	Sulfates
220	Arkansas River near Great Bend, Kans.	257	44	316	31	219
224*	Little Arkansas at Valley Center, Kans.	493	34	33	45	44
227	Arkansas River at Arkansas City, Kans.	2,600	171	107	1,200	752
229	Walnut River at Winfield, Kans.	1,530	67	64	276	264
232	Med. Lodge River near Kiowa, Kans.	103	65	242	18	67
235	Salt Fork of Arkansas River near Jet, Okla.	363	1,460	433	1,430	424
236	Salt Fork of Arkansas River near Tonkawa, Okla.	820	738	233	1,630	515
238	Arkansas River at Ralston, Okla.	7,210	174	97	3,380	1,880
246*	Cimarron River near Mocane, Okla.	81	561	172	123	38
248	Cimarron River near Waynoka, Okla.	274	5,110	572	3,760	421
253	Cimarron River near Perkins, Okla.	1,410	1,060	254	4,020	963
258	Cimarron River near Mannford, Okla.	1,880	834	202	4,220	1,020
283	Verdigris River near Inola, Okla.	7,470	50	37	1,010	745
361*	Canadian River at Logan, New Mex.	170	80	174	36	79

TABLE IV. ARKANSAS RIVER BASIN WATER QUALITY DATA (CONT'D)

PHS Sta. No.	Location	Avg. Flow (cfs)	Concentration (mg/l)		Load (Tons/Day)	
			Chlorides	Sulfates	Chlorides	Sulfates
362*	Canadian River near Amarillo, Texas	279	168	218	128	166
363	Canadian River near Canadian, Texas	264	269	184	193	132
364	Canadian River near Bridgeport, Okla.	481	106	356	138	462
366*	Little River near Tecumseh, Okla.	104	83	27	23	8
367	Little River near Sasakwa, Okla.	245	442	28	291	18
368	Canadian River at Calvin, Okla.	1,380	200	108	747	403
387*	N. Canadian River near Oklahoma City, Okla.	268	261	207	189	150
388	N. Canadian River near Wetumka, Okla.	525	237	55	335	78
390	Deep Fork near Beggs, Okla.	715	120	28	231	54
392	Canadian River near Whitefield, Okla.	4,520	133	56	1,620	682
403	Arkansas River at Van Buren, Ark.	38,800	105	58	10,997	6,075
760	Arkansas River below Hutchinson, Kans.	641	286	210	494	363
761	N. Canadian River near Eufaula, Okla.	1,870	159	40	801	201
762	N. Canadian River below Lake Overholser, Okla.	169	123	170	56	77

TABLE IV. ARKANSAS RIVER BASIN WATER QUALITY DATA (CONT'D)

PHS Sta. No.	Location	Avg. Flow (cfs)	Concentration (mg/l)		Load (Tons/Day)	
			Chlorides	Sulfates	Chlorides	Sulfates
763*	Salt Creek of Little River near DeWright, Okla.	108	777	18	227	5
764*	Salt Fork of Arkansas River near Winchester, Okla.	96	127	609	33	158
765	Wewoka Creek near Wetumka, Okla.	151	481	24	196	10
767	Rattlesnake Creek near Raymond, Kans.	70	1,100	137	207	26
769*	Salt Creek of Cimarron at Okeene, Okla.	43	1,870	730	219	85
772*	Salt Fork of Arkansas River at Cherokee, Okla.	90	131	642	32	155
773*	Cimarron River at Protection, Kans.	185	441	161	219	80
838*	Canadian River at Purcell, Okla.	659	194	275	347	492
862	Cimarron River near Buffalo, Okla.	160	1,960	222	842	95

* Denotes one year or less of quality data
cfs - Cubic feet per second
avg.- Average
mg/l - Milligram per liter

TABLE V - RED RIVER BASINS
QUANTITIES OF WATER QUALITIES AT SELECTED STATIONS
WATER YEAR 1962

PHS Sta. No.	Stream and Location	Total Flow Acre-Feet	ACRE FEET AT SPECIFIC CONDUCTANCE 0-500	500-1000*	1000-1500	1500-2500	2500-5000	5,000-10,000	10,000-30,000
478	Red River near Brice, Texas	40,300	1,940 (4.8%)	2,410 (6%)	716 (1.7%)	1,350 (3.4%)	4,950 (12.3%)	10,600 (26.4%)	870 (2.2%)
750	Red River near Quanah, Texas	136,000	00 (0%)	0 (0%)	0 (0%)	119 (0.1%)	1,890 (1.4%)	42,200 (31%)	31,600 (23.3%)
508	Red River near Gainesville, Texas	1,870,000	0 (0%)	202,000 (10.7%)	686,000 (36.6%)	399,000 (21.3%)	564,000 (30.2%)	23,000 (1.2%)	0 (0%)
522	Red River near Colbert, Okla.	3,140,000	0 (0%)	0 (0%)	0 (0%)	3,140,000 (100%)	0 (0%)	0 (0%)	0 (0%)
529	Red River near Index, Ark.	7,912,000	2,300,000 (29.1%)	2,188,000 (27.7%)	1,475,000 (18.6%)	1,949,000 (24.6%)	0 (0%)	0 (0%)	0 (0%)
520	Washita River near Durwood, Okla.	820,000	276,000 (33.6%)	285,000 (34.8%)	198,000 (24.1%)	1,830 (0.2%)	0 (0%)	0 (0%)	0 (0%)

* Waters having conductance of 1000 micromhos/cm or less; generally contain acceptable levels of mineralization

29

TABLE VI- ARKANSAS RIVER BASINS
QUANTITIES OF WATER QUALITIES AT SELECTED STATIONS
WATER YEAR 1962

PHS Sta. No.	Stream and Location	Total Flow Acre-Feet	acre-feet at specific conductance 0-500	500-1000*	1000-1500	1500-2500	2500-5000	5000-10,000	10,000-30,000
220	Arkansas River near Great Bend, Kans	236,200	97,000 (41.1%)	39,700 (16,8%)	26,800 (11.3%)	55,400 (23.5%)	17,300 (7.3%)	0 (0%)	0 (0%)
227	Arkansas River near Arkansas City, Kans.	2,055,000	794,000 38.7%	486,900 (23.7%)	253,400 (12.3%)	516,100 (25.1%)	4,720 (0.2%)	0 (0%)	0 (0%)
238	Arkansas River at Ralston, Okla.	5,066,000	1,602,200 (32.0%)	1,183,300 (23.6%)	859,700 (17.2%)	1,360,000 (27.2%)	0 (0%)	0 (0%)	0 (0%)
403	Arkansas River at Van Buren, Ark.	24,682,000	7,234,000 (29.3%)	14,952,000 (60.6%)	2,114,000 (8.6%)	382,800 (1.5%)	0 (0%)	0 (0%)	0 (0%)
392	Canadian River near Whitefield, Ok[illegible].	3,383,000	1,459,000 (43.1%)	1,435,000 (42.4%)	428,800 (12.7%)	61,000 (1.8%)	0 (0%)	0 (0%)	0 (0%)

* Waters having conductance of 1000 micromhos/cm or less generally contain acceptable levels.

at Van Buren, Arkansas if mineral content is the limiting factor. The Arkansas-Red River Basins Water Quality study identified fifteen major natural chloride sources from which a total of nearly 7700 tons per day are released. Ten of these sources were in the Red River basin and five were in the Arkansas basin (Table VII).

Discharge and concentration characteristics are variable for the total group of sources. Large seepage areas are conducive to the formation of salt plains such as at the 10,000 acre Great Salt Plains (Area I) and the four mile long Big Salt Plains on the Cimarron River (Area II). In some of the areas, brines are released to the streams primarily by one or more springs (Areas V, VII, VIII, and X). Concentrations of the spring brines vary, even in the same relative location.

Eight additional brine sources are identified in Table VIII. These sources were classified as secondary because they represent loads of chlorides from numerous small discharges and/or were not contributing an excessively degrading effect to the rivers. Total loads from these sources were 1070 tons per day of chloride ion, of which 490 occurred in the Arkansas basin and 580 tons per day in the Red River basin.

Many of mans' activities introduced chlorides into these streams. They included domestic, municipal, industrial, and agricultural uses. The most important man-made source originated from the brine associated with oil and gas production.

About fifteen per cent of the oil produced in the United States comes from the Arkansas-Red River basin. Each barrel of oil recovered from the subsurface deposits may be accompanied by as much as 100 barrels

TABLE VII
MAJOR NATURAL SOURCES OF CHLORIDE IN ARKANSAS-RED RIVER BASINS

Area	River Basin	Description and Location	Chloride Concentration mg/l	Load Tons/Day
I	Arkansas	10,000 acre salt flat immediately above Great Salt Plains Reservoir on Salt Fork of Arkansas River near Cherokee, Okla.	190,000	1,400
II	Arkansas	Falt Flats on Cimarron River of approximately 4 miles in length occurring near Edith, Okla.	190,000	2,920
III	Arkansas	Salt Flat on Cimarron River about 2 miles in length near Buffalo, Okla.	190,000	600
IV	Arkansas	Headwaters of Salt Creek, tributary to Cimarron River near Southard, Okla.	60,000	220
V	Red	Large spring flowing at rate of 5 cfs on Red River near Estelline, Texas	25,000	375
VI	Red	Numerous seeps and springs on swell tributary to Elm Fork of Red River near Carl, Okla.	190,000	250
VII	Red	Several large springs, numerous seeps and salt plains located on 2 mi. length salt creek near mouth of this tributary to N. Wichita River. Nearest community is Paducah, Texas	20,000	200

mg/l = milligrams per liter

TABLE VII (CONT'D)

Area	River Basin	Description and Location	Chloride Concentration mg/1*	Load Tons/Day
VIII	Red	Several large springs and numerous seeps along 2 mi. length of S. Wichita River near Guthrie, Texas	4,000 to 27,000	200
IX	Red	Numerous seeps along 2 mi. length of North and Middle Pease Rivers near Childress, Texas	10,000 to 20,000	350
X	Red	One large spring and several small seeps along two mile length of Middle Wichita River near Paducah, Tex.	2,000 to 4,000	50
XI	Red	Numerous brine seeps along Prairie Dog Town Fork of Red River near Brice, Tex.	4,000 to 32,000	175
XII	Arkansas	Numerous small seeps and two large salt marshes along bed of Rattlesnake Creek near Raymond, Kans.	11,000	200
XIII	Red	Salt plains, one large and numerous small brine springs in stream bed and along edge of Jonah Creek approximately three mi. in length beginning at the mouth. This tributary to Prairie Dog Town Fork of Red River located near Childress, Texas	27,000 to 40,000	450
XIV	Red	Numerous small seeps in stream bed of initial two mi. above mouth of Salt Creek, tributary to Red River near Childress, Texas	30,000	150
XV	Red	Numerous small seeps and springs for about one mi. of Little Red River near Turkey, Texas	100,000 to 150,000	150

* mg/1 = milligrams per liter

TABLE VIII
SECONDARY CHLORIDE SOURCES IN ARKANSAS-RED RIVER BASINS

Basin	Stream and State	Chloride Load Tons/Day
Arkansas	Arkansas River and tributaries between Great Bend and Hutchinson, Kansas	260
Arkansas	Ninnescah River in Kansas	200
Arkansas	Turkey Creek, tributary to Cimarron River in Oklahoma	30
Red	Red River and tributaries between Area XI and Estelline, Texas	200
Red	Lebos Creek downstream from Eldorado, Oklahoma	30
Red	Elm Fork of Red River above Area VI in Oklahoma	100
Red	Elm Fork of Red River and its tributaries downstream from Area VI in Oklahoma	240
Red	Boggy Creek of North Fork of Red River in Okla.	10

of salt water ranging in chloride concentrations from a few thousand milligrams of chloride per liter to 200,000 milligrams per liter. Total tonnages of salt brought to the surface are enormous. Only the dedicated work of state and local agencies, plus the cooperation of the oil industry, has kept the streams in as good, although not completely satisfactory, condition. The Verdigris River in Kansas and Oklahoma, Walnut River in Kansas, Deep Fork River in Oklahoma, Wewoka Creek in Oklahoma, Canadian River in Oklahoma, Little River in Oklahoma, Little Wichita River in Texas, and Beaver Creek in Texas contain mostly man-made brine wastes. A significant portion is considered to be the result of past and present oil field activities.

RECOMMENDATIONS AND FUTURE ACTIVITIES

Natural occurring salt sources and oil field brine wastes contribute approximately 95% of the chlorides entering the two basins. It is estimated that the major pollution is added to the streams in volumes representing less than 1% of their average flow. Control of both the natural occurring chlorides sources and the man-made chloride wastes will have to be accomplished to develop full use of the water in the two basins.

Numerous recommendations have been made for control of the natural occurring major salt source areas. They include (1) storage of the brine wastes in a reservoir, (2) elimination or reduction of fresh water recharge to the subsurface salt deposits, (3) elimination or reduction of brine surface flows by hydrostatic pressure, (4) transportation of brines by pipeline or canal to non-damaging sites, (5) promote utilization of salt or salt water brines, (6) transfer of better quality waters into area of use, and blending with less desirable waters to produce an acceptable product, and (7) subsurface disposal by collection and injection of the brine fluid into an acceptable formation.

All the states in these basins have legislation and administrative programs to control man-made water pollution. In general, the interest and legal authority is divided among two or more agencies in each state.

The total pollution reaching two river systems at the present time is so serious as to impair the use of these water resources in the study area. In order to provide for the optimum development of the Arkansas-Red River basins, the following is recommended:

1. Feasibility studies of the various methods of controlling the natural chloride sources be continued by the Corps of Engineers with completion scheduled at the earliest practical date.
2. A complete economic study of the cost - benefit ratio to be made on the two basins at the completion of the Corps of Engineers feasibility studies on effectiveness of various control measures.
3. Plans and programs be developed for the control of natural occurring and man-made chloride wastes in the two basins and fully coordinated with Federal, State, and Local interest so that these water resources can achieve optimum development.
4. The water quality monitoring network be continued for the purpose of evaluating changes in mineral pollution in the basins.

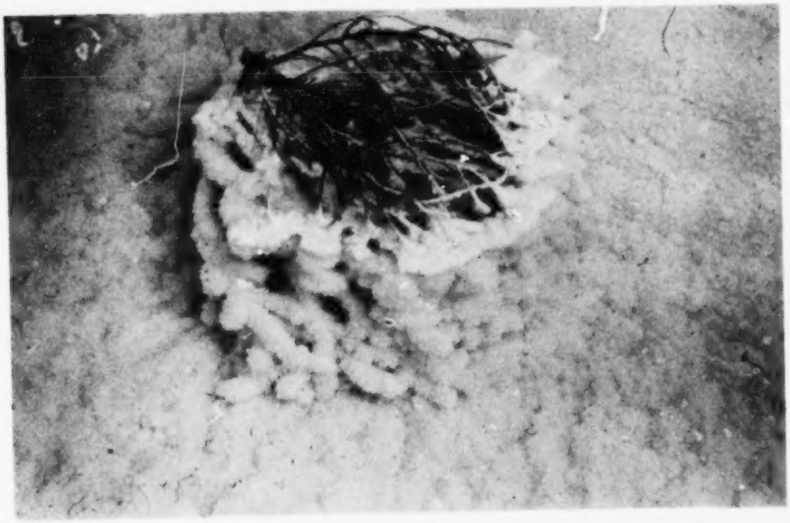
5. Research and investigations be undertaken on control measures which show promise in reducing or eliminating mineral pollutional effects in the two major river systems.

PICTURES OF SPECIFIC AREAS
ARKANSAS-RED RIVER POLLUTION CONTROL

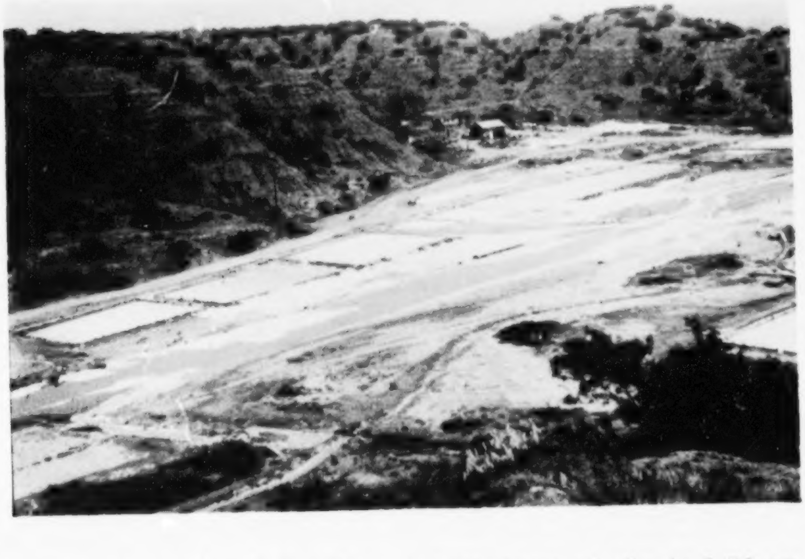
Confluence of Buffalo and Cimarron Rivers (Tributary to the Arkansas River) at the Big Salt Plains in Northwest Oklahoma.

Natural salt deposits concentrated by evaporation on Buffalo River in Northwest Oklahoma.

PICTURES OF SPECIFIC AREAS
ARKANSAS-RED RIVER POLLUTION CONTROL



Salt deposits on a tumble weed. Note weed is resting in approximately one foot of clear brine.



Flowers Salt Works located on a tributary of the Red River in Southwest Oklahoma.

CHAPTER III

WATER RESOURCES

SUMMARY

The water resources program operates under the authority and within the framework provided in the Federal Water Pollution Control Act, as amended by Public Law 87-88; and a Memorandum of Agreement between the Department of the Army and Department of Health, Education, and Welfare, dated November 4, 1958, related to the Water Supply Act of 1958.

From its conception in 1959, personnel from the program have served as consultants to the Corps of Engineers and the Bureau of Reclamation, providing services in projecting the future needs for and value of storage for municipal and industrial purposes in multipurpose projects. In addition and after the passage of Public Law 87-88, the studies included the need for and value of storage for water quality control. Coordination of Corps projects, at the field level, is first with the District and then with their Southwestern Division Office in Dallas, Texas. For Bureau of Reclamation projects, coordination is first accomplished through the Development Office of the Bureau of Reclamation and then with the Bureau of Reclamation, Region V Office, Amarillo, Texas.

Future water resources and pollution control studies to be undertaken by the Public Health Service include individual water quality studies, single reservoir projects, and the complete basin concept as detailed in Senate Document No. 97.

In cooperation with the U.S. Study Commission-Texas, Federal agencies, and the agencies of the State of Texas, the Public Health Service has completed studies of the quality aspects of the intrastate basins of the

40

State. The results of these studies have become a part of the report "U.S. Study Commission-Texas" and points out the need for advancing the proposed Public Health Service comprehensive programs for the western Gulf basins.

PROJECTS COMPLETED

Under the provision of the Water Supply Act of 1958 and subsequent laws and upon request of the Corps of Engineers and the Bureau of Reclamation, our office has completed forty-six studies for Federal projects in the area comprising all or part of eight states (Region VII states and parts of Colorado, Kansas and Missouri). The requirements varied from individual reservoir studies to complete water use studies of river basins.

Of the forty-six projects that have been studied, nineteen determined the need for and value of storage for municipal, industrial, and water quality control purposes. Eighteen studies considered the need for and value of storage for municipal and industrial purposes only, while the remaining nine projects evaluated the need and value of storage for quality control. The future water requirements were based on economic projections of the area, which considered national growth as well as local resources and their expected use.

In many areas, the total future water needs exceeded the maximum capability of the area requiring a reduction, or complete curtailment, in the future use of storage in reservoirs for water quality control purposes. In areas of this type, where the water supply storage is allocated to higher priority use than water quality control, the streams that may be polluted by the return flows, using our present methods of treatment for adequately treated municipal and industrial wastes will be dependent on a higher degree of treatment than is presently being used for the curtailment of the pollution. In water-short areas of this type, pollution control through an advancement in our present technology to allow for an economical higher degree of sewage treatment will be required.

A unique situation of this type in Texas is the Trinity River. This is partly brought about by the location of the metropolitan area of Dallas-Fort Worth in the upper reaches of the basin. A large municipal and industrial complex virtually centered at the headwater of the Trinity River imposes on the river a high pollutional load that far exceeds the assimilative capacity of the uncontrolled drainage of the upper portion of the river and adversely affects the quality for a distance of 357 river miles.

In the study of the Trinity River basin, the projected municipal and industrial water needs were in excess of the resources of the existing and proposed reservoirs in the upper portion, requiring a pump-back of water to satisfy this projected need. The proposed Tennessee Colony Reservoir was found to be the closest one to have water of sufficient quantity and quality to meet this projected municipal and industrial need in the upper basin. While the storage is to be allocated to future municipal and industrial needs, a pump-back of 80 million gallons per day (mgd) average will meet the water quality control needs to the year 2020. The water is returned to Benbrook Reservoir where it is released to the river, flowing 145 miles to Tennessee Colony Reservoir where it is recirculated through the pipe, reservoir, and river system. At this point in time, the year 2020, the use of water for quality control is reduced due to the increasing need for municipal and industrial purposes.

As this phasing-out of the use of water for quality control takes place, an advance in technology for an economical higher degree of treatment of sewage will be necessary to abate any degrading of the stream from the imposed pollution load.

To date, the Public Health Service has established a need for 3,000 mgd of flow for quality control in the streams and rivers studied in the eight-state area. Table I, which follows, lists the completed studies with the projected water needs for municipal, industrial, and water quality control purposes.

FUTURE PROJECT WORK PLANS

Federal agencies, to date, have requested of the Public Health Service additional studies on 29 individual projects. The projects range from quality studies of streams to individual reservoirs and complete basin studies covering all aspects of water use. These studies will determine the projected needs for and value of storage for municipal and industrial and water quality control purposes, and developing a complete water management plan for the area or basin involved. The flow regulation requirements are based on the expected pollution load from this water use on the receiving stream as well as the projected load resulting from other manmade and natural pollutants.

The future workload of projects through June 30, 1967 is presented in Table II.

Table I

Studies Completed to Determine Future Water Needs From Federal Water Resources Projects

Project	Year	Agency	State	River	Population		Needs		Remarks
					Present	Future	M & I (mgd)	Water Quality Control (mgd)	
Beaver	1959	C.of E.	Ark.	White	82,000	215,000	200		
Millwood	1959	C.of E.	Ark.	Little	66,000	220,000	300		
Broken Bow Res.	1959	C.of E.	Okla.	Little	31,588	37,746	165	Discussed	
Keystone Res.	1959	C.of E.	Okla.	Arkansas	193,363	730,000		3	
Optima	1959	C.of E.	Okla.	N. Canadian	23,692	83,700	17.2		
Lake Wichita	1959	C.of E.	Texas	Holliday Crk.	102,000	340,000	70		
Wallisville Res.	1960	C.of E.	Texas	Trinity	2,446,000	9,787,000	3,874	0	
Cypress Crk.	1960	C.of E.	Texas	Cypress Crk.	6,348	36,500	10	Discussed	
Big Hill Creek Res.	1960	C.of E.	Kans.	Verdigris	35,536	59,000	15.5	Discussed	
Millican Res.	1960	C.of E.	Texas	Navasota	43,553	176,700	1,138	Discussed	
San Gabriel Res.	1960	C.of E.	Texas	Brazos	326,200	1,143,200	1,102	Discussed	Included in Millican Res.
Lake Kemp	1960	C.of E.	Texas	Wichita	101,000	310,000	70	Discussed	

Table I (Continued)

Project	Year	Agency	State	River	Population		Needs		Remarks
					Present	Future	M & I (mgd)	Water Quality Control (mgd)	
Grand (Neosho) and Cottonwood Rivers	1960	C.of E.	Kans. Okla. Mo.	Grand	46,648	88,320	21	32	
Little Cypress Crk.	1960	C.of E.	Texas	Little Cypress Crk.	70,175	281,000	120	Discussed	
Bayou Dorcheat	1960	C.of E.	Ark.	Bayou Dorcheat	29,684	62,500	49	Discussed	
Benton Res.	1960	C.of E.	Ark.	Saline	89,849	157,000	130	170	
Sanders, Big Pine, and Acworth	1960	C.of E.	Texas	Sanders, Big Pine, Collier Crks.	32,015	123,000	36.8		
Hugo, Tuskahoma, and Clayton Res.	1960	C.of E.	Okla.	Kiamichi	2,402,403	8,416,000	1,392	644	Quantities recomputed in S.E.Okla. and S.W.Ark.
Lavon Res.	1961	C.of E.	Texas	Trinity	83,500	411,000	83.2	Discussed	Quantities recomputed in Trinity report.
Somerville Res.	1961	C.of E.	Texas	Brazos	326,200	1,143,200	1,102	Discussed	Included in Millican Res.
Cypress Bayou	1961	C.of E.	La.	Cypress Bayou	221,065	640,000	23.4	Discussed	

Table I (Continued)

Project	Year	Agency	State	River	Population		Needs		Remarks
					Present	Future	M & I (mgd)	Water Quality Control (mgd)	
Marion and Cedar Point	1961	C.of E.	Kans.	Cottonwood	45,992	68,000	32		M & I includes water quality control.
DeGray Res.	1961	C.of E.	Ark. La.	Quachita	430,000	774,000	170	110	
Sand, Copan, Birch, Candy, Skiatook	1961	C.of E.	Okla.	Verdigris	365,000	1,530,000	490	41	
Palmetto Bend	1962	Bu. Rec.	Texas	Lavaca				0	Quality study only
Mountain Park	1962	Bu. Rec.	Okla.	Otter and Elk Crks.	22,888	70,800		1.0	
Trinidad Res.	1962	C.of E.	Colo.	Purgatoire			0	0	
S. E. Okla. S. W. Ark.	1962	C.of E.	Okla. Ark.	Tributaries to Red	876,107	2,759,000	1,416	950	
Shidler	1962	C.of E.	Okla.	Salt Crk. (Ark.)	3,417	5,900	1.7	0.83	
Millwood-Pine Creek Res.	1962	C.of E.	Okla. Ark.	Little				36	Quality statement included in S.E. Okla. and S.W. Ark.

Table I (Continued)

					Population		Needs		
Project	Year	Agency	State	River	Present	Future	M & I (mgd)	Water Quality Control (mgd)	Remarks
Trinity River Basin	1962	C.of E.	Texas	Trinity	1,895,400	6,551,000	2,080	80	
(Buffalo Bayou - Houston Ship Channel)								1,200	Included in Trinity report.
Cuero Res.	1962	Bu. Rec.	Texas	Guadalupe				0	Quality study only
Pecan Bayou Watershed	1962	C.of E.	Texas	Colorado	40,540	68,400	16.3	1.5	
Eleven Point	1962	C.of E.	Ark. Mo.	Eleven Point	14,548	33,000	0	0	
Waurika Project	1962	C.of E.	Okla.	Red	145,000	300,000	67	20	
Marked Tree Siphon	1963	C.of E.	Ark.	St. Francis	78,000	100,000	11	0	
Arbuckle Res.	1963	Bu. Rec.	Okla.	Washita				1.8	Quality study only
Mangum	1963	Bu. Rec.	Okla.	Salt Fork of Red	40,180	57,000		1.0	
El Dorado, Douglass, Towanda	1963	C.of E.	Kans.	Walnut	44,336	115,000	79.5	14.6	
Pine Crk. Res.	1963	C.of E.	Okla.	Little	211,000	577,000	84	36	Included in S. E. Okla. and S.W. Ark.

Table I (Continued)

Project	Year	Agency	State	River	Population		Needs		Remarks
					Present	Future	M & I (mgd)	Water Quality Control (mgd)	
Texas Basins	1963	Bu. Rec.	Texas	Sabine, Neches Trinity, Lavaca, Navidad, Guadalupe, San Antonio				0	Canal, quality study only.
Gillham Res.	1963	C.of E.	Ark.	Little	211,000	577,000	42	18	Included in S.E. Okla. and S.W. Ark.
City of El Paso	1963	C.of E.	Texas	Rio Grande	314,000	1,620,000	307	Discussed	
Cooper	1963	C.of E.	Texas	S. Sulphur	127,000	300,000	87.6	36	
Bayou Teche and Vermilion	1963	C.of E.	La.	Bayou Teche, Vermilion	334,557	670,000	374	190	
San Antonio River	1963	Bu. Rec.	Texas	San Antonio				189	Quality study only.

CHAPTER IV

SOUTHWEST WATER POLLUTION CONTROL RESEARCH

SUMMARY

One of the nine Regional Public Health Service Water Pollution Control Research Laboratories, authorized under the Federal Water Pollution Control Act, will be located at Ada, Oklahoma. Thirteen states in the Southwest will be served by the facility. Ground will be broken for the laboratory shortly after the first of the year and the research center is scheduled to open early in 1965. When completed and fully equipped, it will house a staff of approximately 150 scientists and supporting personnel.

The new laboratory will conduct research investigations, experiments, field demonstrations, studies, and training aimed at the prevention and control of water pollution. The need to protect and improve the Southwest's water resources is of major importance to the future development of agriculture, industry, and our rapidly growing cities.

Water can presently be stored in federal reservoirs for the purpose of regulating stream flow and thereby making the river usable where now even the best known methods of treatment of wastes may produce an effluent which would render the stream unfit for some purposes. The management of these waters calls for considerable research to satisfy all conditions of geography, climate, and man's use. The growing petro-chemical industry is producing new products every day that also result in a new and sometime hard to treat waste. Research will provide an answer to many of these problems.

Reducing the brine from natural salt springs in the water of the Arkansas-Red River systems must receive continued attention. Feasible means of improving treatment of municipal wastes which contain more and more hard to treat exotic chemicals such as detergents must be found as well as the treatment of pesticides and herbicides.

When the new laboratory is in full operation, it will act in support of many individual research, technical, and other projects which are already being carried on within this thirteen-state area. It will help state and local governments, work with industry, universities, and other private groups, and complement the work of water oriented Federal Agencies. Research at the Regional Water Pollution Control Laboratory will cover all phases of water supply and water quality management in Region VII and portions of adjoining states and the personnel will represent a wide range of scientific and technical skills.

RESEARCH PROGRAM

At a recent conference in the Public Health Service Office in Dallas, Texas, a number of research projects were suggested by representatives from the Water Pollution Control Agencies of this area along with university representation for study at the new laboratory. The suggestions cover many broad areas in the field of water pollution control. These recommendations already have been screened by the Public Health Service Research Committee, and the following broad areas of investigation are being considered for study as soon as laboratory facilities are available:

1. Further study and investigation of the problems associated with natural brine deposits in the Arkansas and Red River Basins.
2. Problems of brine disposal and control in petroleum-producing areas.
3. Pollution problems associated with the manufacture of petrochemical, petroleum and allied products.
4. Paper mill waste treatment problems.
5. Return flows from irrigation and other related problems associated with irrigation practices including the effect of agricultural chemicals on water supply sources.
6. Water quality degradation resulting from nutrients in sewage and the development of economically feasible high degree of treatment of domestic and industrial wastes.
7. Continued investigation and study of detergents, herbicides, pesticides, and other toxicants and their pollutional effect upon streams.
8. The multiple use of reservoirs and the public health effect this use may have on domestic water supplies.
9. Determine the effects of navigation, locks, dams, and reservoirs upon natural capability of the stream for assimilation of wastes.
10. Study fully the effects of stream flow regulation for water quality control.

Although the list of projects to be undertaken at the Research Laboratory is impressive, only four or five of the projects enumerated above will be considered during the initial operation.

CHAPTER V

WATER QUALITY

SUMMARY

This Chapter discusses the sources of wastes and their effect on the receiving waters in Region VII. Municipal wastes and types of treatment facilities to reduce the impact of these wastes upon the receiving waters are discussed in the first section. Progress in construction of needed facilities, and the role of the Public Health Service Construction Grants program are presented.

Wastes generated at Federal installations are covered. The activities of the Public Health Service are: determining the effect of these wastes, and recommending pollution abatement activities where appropriate. The progress to date in these two areas is outlined.

A proposed inventory of Industrial Waste sources is outlined and progress is given under the Industrial Waste section. The concluding portion of this Chapter describes the activities of the Public Health Service in Stream Quality Monitoring through the National Water Quality Network. Data on Stream Quality are included for specific stations in the Gulf-Southwest area.

Another surveillance activity which should be mentioned to complete the picture is maintaining an inventory of municipal water use. The water use data are helpful in establishing priorities for pollution control activities.

MUNICIPAL WASTES

Fundamental to effective programs of pollution prevention and abatement is knowledge of what facilities we have to control pollution, what these facilities are accomplishing, and what more needs to be done. For many years the Public Health Service, with the cooperation of various State agencies, has collected, analyzed, and published data on municipal sewage systems.

This section provides information concerning sewage wastes generated in sewered communities, sewer or sanitary districts, and institutions. The source for the data presented and discussed is the 1962 Inventory of Municipal Sewage Facilities prepared by the Public Health Service in cooperation with various State agencies concerned. Information contained in the inventory reflects conditions as recent as January 1962. State agencies participating in the preparation of this inventory are indicated in Table XVI of this Chapter.

Tables I through X of this Chapter have been compiled from this inventory to indicate the various aspects of sewage treatment systems in Region VII. It is noted from Table I, 1,273 communities having a 1960 Census population of 12,294,850 serve 11,547,840 people. The total population for Region VII is 17,902,278, which includes rural areas. It should be noted there are 1,514 sewage facilities serving 1,273 communities.

Table III indicates number of communities and population served by treatment plants. Many communities were reported having sewage collection systems with no treatment plant. 65 communities serving

1,388,280 people were reported as having no treatment plant. Table V indicates treatment status in terms of facilities considered. Sewage facilities without treatment plants serving 1,494,960 people, numbered 74. 1,440 facilities serving 10,052,880 people were reported as having treatment plants.

Considerable has been accomplished in construction of sewage works since the Municipal Sewage Inventory was completed in February 1962. Tables XI through XV indicate communities or sewage facilities that were reported as having no sewage treatment plants. Construction grants information from Chapter VII, Tables IV through VI, concerning Federally aided sewage projects with construction completed, under construction, or construction proposed, indicates that out of 74 sewage facilities reporting no sewage treatment plant, positive action to provide treatment measures has been taken for 45 of these. The status of these projects is shown opposite the facility name in Tables XI through XV. In addition to this work, many of the other communities and facilities reported as having sewage treatment plants have had Federally aided projects to provide additional treatment measures. Chapter VII presents projects receiving Federal aid for sewage works construction in Region VII.

TABLE I - 1960 CENSUS POPULATIONS NUMBER OF COMMUNITIES AND FACILITIES CONSIDERED AND POPULATION SERVED

	ARK.	LA.	N.M.	OKLA.	TEX.	REG. VII
1. 1960 Census Populations1/						
A. Total Population for State	1,786,272	3,257,022	951,023	2,328,284	9,579,677	17,902,278
2. Communities Considered2/						
A. Number	149	125	66	267	666	1,273
B. 1960 Census Population of Communities1/	850,612	1,782,964	615,305	1,603,137	7,442,832	12,294,850
C. Population served	792,675	2,100,673	599,821	1,452,524	6,602,147	11,547,840
3. Facilities considered2/						
A. Number	161	161	76	284	832	1,514
B. Population served	792,675	2,100,673	599,821	1,452,524	6,602,147	11,547,840

1/ U.S. Department of Commerce, Bureau of the Census, United States Census of Population, 1960, U.S. Government Printing Office, Washington, D. C., 1961.

2/ Department of Health, Education, and Welfare, Public Health Service, 1962 Inventory of Municipal Sewage Facilities, Volume VI, Compiled but not yet published.

TABLE II - NUMBER OF COMMUNITIES AND POPULATION SERVED BY TYPE OF SEWER SYSTEMS

	ARK.	LA.	N.M.	OKLA.	TEX.	REG. VII
1. Separate Sewer Systems						
A. Number	129	124	66	263	662	1,244
B. Population served	705,285	2,095,553	599,821	1,438,724	6,486,007	11,325,390
2. Combined Sewer Systems						
A. Number	2	0	0	0	1	3
B. Population served	64,300	0	0	0	55,000	119,300
3. Both Separate and Combined						
A. Number	0	0	0	0	1	1
B. Population served	0	0	0	0	58,100	58,100
4. Type System Unknown						
A. Number	18	1	0	4	2	25
B. Population served	23,090	5,120	0	13,800	3,040	45,050

TABLE III - NUMBER OF COMMUNITIES AND POPULATION SERVED BY TREATMENT STATUS

	ARK.	LA.	N.M.	OKLA.	TEX.	REG. VII
1. Communities with treatment						
A. Number	125	95	65	259	659	1,203
B. Population served	616,475	824,045	598,721	1,443,474	6,565,152	10,047,867
2. Communities without treatment						
A. Number	23	26	1	8	7	65
B. Population served	170,200	1,170,935	1,100	9,050	36,995	1,388,280
3. Communities with and without Treatment[1/]						
A. Number	1	4	0	0	0	5
B. Population served	6,000	105,693	0	0	0	111,693

[1/] Indicates a portion of a community is served by a treatment plant and a portion is without treatment.

TABLE IV - NUMBER OF FACILITIES AND POPULATION SERVED BY TYPE OF SEWER SYSTEMS

	ARK.	LA.	N.M.	OKLA.	TEX.	REG. VII
1. Separate Sewer Systems						
A. Number	141	158	76	279	826	1,480
B. Population served	705,285	2,095,553	599,821	1,438,724	6,486,007	11,325,390
2. Combined Sewer Systems						
A. Number	2	0	0	0	1	3
B. Population served	64,300	0	0	0	55,000	119,300
3. Both Separate and Combined						
A. Number	0	0	0	0	3	3
B. Population served	0	0	0	0	58,100	58,100
4. Type System Unknown						
A. Number	18	3	0	5	2	28
B. Population served	23,090	5,120	0	13,800	3,040	45,050

TABLE V - NUMBER OF FACILITIES AND POPULATION SERVED BY TREATMENT STATUS

	ARK.	LA.	N.M.	OKLA.	TEX.	REG. VII
1. Facilities with Treatment						
A. Number	137	127	75	276	825	1,440
B. Population served	618,475	827,058	598,721	1,443,474	6,565,152	10,052,880
2. Facilities Without Treatment						
A. Number	24	34	1	8	7	74
B. Population served	174,200	1,273,615	1,100	9,050	36,995	1,494,960

TABLE VI - NUMBER OF FACILITIES AND POPULATION SERVED BY DEGREE OF TREATMENT

	ARK.	LA.	N.M.	OKLA.	TEX.	REG. VII
1. Primary Treatment 1/						
A. Number	73	11	5	36	116	241
B. Population served	173,155	212,895	5,196	204,685	189,851	785,782
2. Secondary Treatment 2/						
A. Number	64	116	70	239	709	1,198
B. Population served	445,320	614,163	593,525	1,237,589	6,375,301	9,265,898
3. Intermediate Treatment 3/						
A. Number	0	0	0	1	0	1
B. Population served	0	0	0	1,200	0	1,200

1/ Removal of practically all settleable solids and at least 35% of the biochemical oxygen demand of the wastes.

2/ Primary treatment plus removal of practically all the suspended solids and at least 85% of the biochemical oxygen demand load.

3/ 50% biochemical oxygen demand removal.

TABLE VII - NUMBER OF FACILITIES FURNISHING PRIMARY TREATMENT AND POPULATION SERVED BY PLANT CLASSIFICATION

	ARK.	LA.	N.M.	OKLA.	TEX.	REG. VII
1. Septic Tanks						
A. Number	14	5	2	13	15	49
B. Population served	40,705	4,250	950	7,495	17,500	70,900
2. Imhoff Tanks						
A. Number	22	4	3	19	100	148
B. Population served	33,900	14,160	4,246	15,590	162,351	230,247
3. Mechanical Cleaners						
A. Number	25	2	0	3	1	31
B. Population served	84,600	194,485	0	180,000	10,000	469,085
4. Plain Hopper						
A. Number	12	0	0	1	0	13
B. Population served	13,950	0	0	1,600	0	15,550

TABLE VIII - NUMBER OF FACILITIES FURNISHING SECONDARY TREATMENT AND POPULATION SERVED BY PLANT CLASSIFICATION

	ARK.	LA.	N.M.	OKLA.	TEX.	REG. VII
1. Activated Sludge						
A. Number	2	13	0	16	48	79
B. Population served	96,000	225,725	0	273,260	1,802,300	2,397,285
2. Extended Aeration						
A. Number	0	12	0	0	21	33
B. Population served	0	6,900	0	0	35,200	42,100
3. Trickling Filter - Standard Rate						
A. Number	6	28	15	134	153	336
B. Population served	93,620	123,105	28,735	522,075	1,338,511	2,106,046
4. Trickling Filter - High Rate						
A. Number	32	35	35	21	181	304
B. Population served	213,410	202,215	546,580	378,994	2,354,560	3,695,759
5. Intermittent Sand Filter						
A. Number	2	1	0	0	20	23
B. Population served	700	275	0	0	23,020	23,995
6. Application to Land						
A. Number	0	0	7	0	32	39
B. Population served	0	0	8,230	0	181,050	189,280
7. Waste Stabilization Pond						
A. Number	21	26	13	68	197	325
B. Population served	40,590	54,943	9,980	63,260	453,155	621,928
8. Miscellaneous and Unknown Methods						
A. Number	1	1	0	0	57	59
B. Population served	1,000	1,000	0	0	187,505	189,505

TABLE IX - MISCELLANEOUS TREATMENT PROCESSES

	ARK.	LA.	N.M.	OKLA.	TEX.	REG. VII
1. Chlorination						
A. Number	15	82	3	12	252	364
B. Population served	180,520	744,510	14,000	534,100	2,812,925	4,286,055
2. Grease Removal						
A. Number	0	0	1	0	0	1
B. Population served	0	0	25,000	0	0	25,000
3. Grit Removal						
A. Number	16	29	21	58	278	402
B. Population served	232,000	520,100	468,150	934,466	5,164,147	7,318,863

TABLE X - SLUDGE HANDLING PRACTICES
NUMBER OF PLANTS

	ARK.	LA.	N.M.	OKLA.	TEX.	REG. VII
1. Septic Tanks	18	5	12	18	23	76
2. Imhoff Tanks	32	40	23	100	522	717
3. Stage Digester	6	4	11	9	45	75
4. Separate Digester	61	26	17	96	239	439
5. Sludge Beds	102	70	64	203	674	1,113
6. Lagoons	0	4	0	2	67	73
7. Mechanical Dewatering	2	0	0	3	6	11
8. Miscellaneous	0	2	0	0	7	9
9. None or No Method	33	51	11	73	77	245

TABLE XI - COMMUNITIES OR FACILITIES REPORTED HAVING NO SEWAGE TREATMENT FACILITIES AND CURRENT STATUS

STATE OF ARKANSAS

Community or Facility[1/]	Current Status[2/]
Alma	Federally aided project proposed
Camden	Federally aided project under construction
Clarendon	Federally aided project under construction
Clarksville	Federally aided project under construction
Dardanelle	Federally aided project under construction
Dermott	Federally aided project under construction
Earle	Federally aided project proposed
Fort Smith	Federally aided projects proposed
Helena	Federally aided project under construction and also Federally aided project constructed
Lepanto	Federally aided project under construction
Luxora	Status unknown; no Federally aided project proposed at present time
Marked Tree	Federally aided project proposed
Newport	Federally aided project proposed
North Little Rock	Federally aided project constructed, and also Federally aided project under construction

TABLE XI (Cont'd) - COMMUNITIES OR FACILITIES REPORTED HAVING NO SEWAGE TREATMENT FACILITIES AND CURRENT STATUS

STATE OF ARKANSAS

Community or Facility[1]	Current Status[2]
Ozark	Federally aided project under construction
Piggott	Federally aided project under construction
Pine Bluff	Federally aided project under construction
Pocohontas	Federally aided project constructed
Stephens	Federally aided project under construction
Van Buren	Federally aided project under construction
Weiner	Federally aided project constructed
West Memphis	Status unknown; No Federally aided project proposed at present time
Wilson	Status unknown; No Federally aided project proposed at present time
Yellville	Status unknown; no Federally aided project proposed at present time

---

[1] Department of Health, Education, and Welfare, Public Health Service, 1962 Inventory of Municipal Sewage Facilities, Volume VII, Compiled but not yet published.

[2] Public Health Service, Construction Grants Section, Region VII, Data current to 12/1/63.

TABLE XII - COMMUNITIES OR FACILITIES REPORTED HAVING NO SEWAGE TREATMENT FACILITIES AND CURRENT STATUS

STATE OF LOUISIANA

Community or Facility[1]	Current Status[2]
Alexandria	Status unknown; no Federally aided project proposed at present time
Berwick	Status unknown; no Federally aided project proposed at present time
Bogalusa	Federally aided project constructed
Bossier City	Status unknown; no Federally aided project proposed at present time
Bossier City (Southern Gardens Subd)	Status unknown; no Federally aided project proposed at present time
Colfax	Status unknown; no Federally aided project proposed at present time
Columbia	Status unknown; no Federally aided project proposed at present time
Coushatta	Status unknown; no Federally aided project proposed at present time
Delhi	Status unknown; no Federally aided project proposed at present time
Donaldsonville	Status unknown; no Federally aided project proposed at present time
Gretna	Federally aided project under construction
Hodge	Status unknown; no Federally aided project proposed at present time
Jennings	Federally aided project proposed
Jonesville	Status unknown; no Federally aided project proposed at present time

TABLE XII (Cont'd)- COMMUNITIES OR FACILITIES REPORTED HAVING NO SEWAGE TREATMENT FACILITIES AND CURRENT STATUS

STATE OF LOUISIANA

Community or Facility[1/]	Current Status[2/]
Lake Providence	Status unknown; no Federally aided project proposed at present time
Logansport	Status unknown; no Federally aided project proposed at present time
Marksville	Federally aided project under construction
Monroe	Federally aided project under construction
Morgan City	Status unknown; no Federally aided project proposed at present time
Natchitoches	Status unknown; no Federally aided project proposed at present time
New Orleans	Federally aided project under construction
New Roads	Federally aided project under construction
Pineville	Status unknown; no Federally aided project proposed at present time
Pineville (Forest Glen Subd)	Status unknown; no Federally aided project proposed at present time
Plaquemine	Federally aided project proposed; and Federally aided project constructed
Ponchatoula	Federally aided project under constructed
Rayville	Status unknown; no Federally aided project proposed at present time
St. Mary Parish (Sewer Dist. #1)	Status unknown; no Federally aided project proposed at present time
St. Mary Parish (Sewer Dist. #2)	Status unknown; no Federally aided project proposed at present time

TABLE XII (Cont'd) - COMMUNITIES OR FACILITIES REPORTED HAVING NO SEWAGE TREATMENT FACILITIES AND CURRENT STATUS

STATE OF LOUISIANA

Community or Facility[1]	Current Status[2]
Shreveport	Status unknown; no Federally aided project proposed at present time
Simmesport	Status unknown; no Federally aided project proposed at present time
Vidalia	Federally aided project proposed
Welsh	Federally aided project proposed
West Monroe	Federally aided project proposed

1/ Department of Health, Education, and Welfare, Public Health Service, 1962 Inventory of Municipal Sewage Facilities, Volume VII, Compiled but not yet published.

2/ Public Health Service, Construction Grants Section, Region VII, Data current to 12/1/63.

TABLE XIII - COMMUNITIES OR FACILITIES REPORTED HAVING NO SEWAGE TREATMENT FACILITIES AND CURRENT STATUS

STATE OF NEW MEXICO

Community or Facility[1]	Current Status[2]
Hagerman	Federally aided project proposed

---

[1] Department of Health, Education, and Welfare, Public Health Service, 1962 Inventory of Municipal Sewage Facilities, Volume VII, Compiled but not yet published.

[2] Public Health Service, Construction Grants Section, Region VII, Data current to 12/1/63.

TABLE XIV - COMMUNITIES OR FACILITIES REPORTED HAVING NO SEWAGE TREATMENT FACILITIES AND CURRENT STATUS

STATE OF OKLAHOMA

Community or Facility 1/	Current Status 2/
Bixby	Federally aided project proposed
Cleveland	Federally aided project under construction
Coweta	Federally aided project proposed
Devol	Status unknown; no Federally aided project proposed at present time
Haskell	Federally aided project constructed
Ryan	Federally aided project proposed
Warner	Federally aided project under construction
Yale	Federally aided project proposed.

1/ Department of Health, Education, and Welfare, Public Health Service, 1962 Inventory of Municipal Sewage Facilities, Volume VII, Compiled but not yet published.

2/ Public Health Service, Construction Grants Section, Region VII, Data current to 12/1/63.

TABLE XV - COMMUNITIES OR FACILITIES REPORTED HAVING NO SEWAGE TREATMENT FACILITIES AND CURRENT STATUS

STATE OF TEXAS

Community or Facility[1]	Current Status[2]
Azle	Federally aided project constructed
Florence	Status unknown; no Federally aided project proposed at present time
Groves	Federally aided project under construction
Lakeview (Jefferson County)	Status unknown; no Federally aided project proposed at present time
Port Aransas	Federally aided project constructed
Port Neches	Federally aided project under construction; and also Federally aided project proposed
Schertz	Federally aided project constructed

1/ Department of Health, Education, and Welfare, Public Health Service, 1962 Inventory of Municipal Sewage Facilities, Volume VII, Compiled but not yet published.

2/ Public Health Service, Construction Grants Section, Region VII, Data current to 12/1/63.

TABLE XVI - STATE AGENCIES PARTICIPATING IN PREPARATION OF 1962 INVENTORY OF MUNICIPAL SEWAGE FACILITIES

ARKANSAS

Arkansas Water Pollution Control Commission
921 West Markham
Little Rock, Arkansas

LOUISIANA

Louisiana State Board of Health
P. O. Box 60630
New Orleans 60, Louisiana

NEW MEXICO

State Department of Public Health
Santa Fe, New Mexico

OKLAHOMA

State Department of Health
3400 North Eastern
Oklahoma City 5, Oklahoma

TEXAS

State Department of Health
1100 West 49th Street
Austin, Texas

FEDERAL INSTALLATIONS

An Inventory of Waste Water Disposal Practices at Federal Installations has been completed by the Public Health Service in cooperation with other Federal agencies. Table No. 17 shows the number of waste sources[1] and quantity of waste discharged by Federal Installations in Region VII as given by this inventory. Classified data for the Department of Defense installations are not included. The two entries in Table No. 17 for waste volume correspond to waterborne wastes, listed in gallons per day, and to nonwaterborne wastes, listed as the number of people contributing wastes to that discharge area each day.

Using the Federal Inventory as a guide, the Region VII office has begun a survey of all of the Federal Installations in the five-state area. Priority for survey has been given to those installations where water pollution problems or other public health problems are suspected. These installations have been selected by review of the Regional office files and by discussion with appropriate State public health personnel. As a part of the survey mentioned above, installations discharging untreated wastes to some receiving area other than another sewer system were investigated. This latter survey was made as the result of a request from the Natural Resources and Power Subcommittee of the Committee on Government Operations--House of Representatives. Only those waste disposal facilities serving more than 200 persons per day or discharging more than 3,000 gallons per day were covered in this survey. Table No. 18 lists[2] facilities discharging untreated wastes to the surface water bodies or various ground disposal areas in Region VII. Facilities which have been surveyed are so indicated.

A report has been prepared for the House Committee which presents the findings and recommendations of the Public Health Service concerning waste disposal needs for those installations falling under Committee criteria for investigation.

In general, the facilities surveyed to date fall into three broad categories. In the first category are those facilities which provide no treatment and which are contributing to water pollution, public health, or nuisance problems. At each facility falling into this category, excellent cooperation has been secured in planning to meet pollution abatement needs. Target dates have been suggested for completion of pollution abatement works in the Public Health Service recommendations.

The second category covers those facilities having no treatment and needing none as presently operated. This category includes recreation areas, temporary small construction sites, and the similar areas served by adequately located, constructed and maintained pit vault or pit-privy-type outhouses. This second group also includes the numerous fish hatcheries or other "industrial" operations discharging waste water of good quality. In arid and sparsely populated regions, properly designed evaporation ponds for disposal of industrial waste water could also be included in category two.

The third group consists of those facilities which had been improperly reported when the inventory was completed. The questions on inventory forms are subject to interpretation by the person completing the inventory questionnaire. For this reason, many entries have been improperly reported to "discharge untreated wastes" when in fact, a satisfactory stabilization lagoon, or other recognized treatment works received the wastes. Another item frequently reported incorrectly is the number of people using the facility during an average day. In some instances, the value reported was the number of persons visiting a given area on the maximum visitor day even though several facilities served that one area. With the same value reported for each facility in that area, the pollution load is many times overstated. Because of this overstatement, facilities which were expected to be inadequate were found to be satisfactory.

Much has been accomplished by this survey program and considerable work remains to be done. The Inventory of Waste Water Disposal Practices at Federal Installations has been an invaluable aid to this work. However, as can be seen from the above discussion, care must be used in interpreting data from this inventory.

1/ This is not the same as the number of Federal Installations in Region VII. Including facilities under the Department of Defense for which data are not classified, there are 2,128 Federal Installations in Region VII. Many of these installations have several waste sources. Defense Department installations for which data are classified have been omitted from Tables XVII and XVIII.

There are also a number of systems from which wastes are transferred to other uses. These have also been omitted from Tables XVII and XVIII.

2/ Classified data are not included.

TABLE NO. XVII
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

ARKANSAS

	Public Utility Sewer System Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U. S. Dept. of Interior						
(a) National Park Service	None			2		129,200
2. U. S. Post Office Dept.	None			56		24,644
3. U. S. Dept. of Agriculture						
(a) Agriculture Marketing Service	None			4		1,750
(b) Forest Service	None			5		1,250
TOTAL ----------------------------------	None			9		3,000
4. Independent Agencies						
(a) Veterans Administration				3		432,000
(b) General Services Administration	None			11		22,640
(c) Federal Aviation Agency	None			5		5,800
TOTAL ----------------------------------	None			19		460,440
5. U. S. Dept. of Defense						
(a) Air Force	None			5		730,549
(b) Army	None			11		
(c) Corps of Engineers	None			6		1,885
(d) Navy	None			5		1,495
TOTAL ----------------------------------	None			27		747,965

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

ARKANSAS

	Surface Water Body Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U. S. Dept. of Interior						
(a) Fish and Wildlife Service	None			5		6,530,011[2]
(b) National Park Service	None			1		435,000
TOTAL ----------------------------------	None			6		6,965,011
2. U. S. Dept. of Agriculture						
(a) Forest Service	None			1		5,000[2]
3. U. S. Dept. of Defense						
(a) Air Force	3		693,869	None		
(b) Army	3		1,196,000	3		1,875,000
(c) Corps of Engineers	2		850	6		37,370
(d) Navy	None			1		100
TOTAL ----------------------------------	8		1,890,719	10		1,912,470

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

ARKANSAS

	Ground Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U. S. Dept. of Interior						
(a) Fish & Wildlife Service	6		7,800	None		
(b) National Park Service	None			4		1,110
TOTAL----------------------------------	6		7,800	4		1,110
2. U. S. Dept. of Agriculture						
(a) Agriculture Research Service	3		1,220	None		
(b) Forest Service	33		32,522	23		755
TOTAL----------------------------------	36		33,742	23		755
3. U. S. Dept. of Defense						
(a) Air Force	1		17,000	None		
(b) Army	1		300	None		
(c) Corps of Engineers	21	935	40,465	59	9.106	450
(d) Navy	2		65	None		
TOTAL----------------------------------	25	935	57,830	59	9,106	450

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

LOUISIANA

	Public Utility Sewer System Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U. S. Post Office Dept.	None			46		27,315[5]
2. U. S. Treasury Dept.						
(a) U. S. Coast Guard	None			4		16,400
3. U. S. Dept. of Health, Educ., & Welfare	None			1		10,448
4. U. S. Dept. of Agriculture						
(a) Agriculture Marketing Service	None			5		1,450
(b) Agriculture Research Service	None			2		90,245
TOTAL------------------------------------	None			7		91,695
5. Independent Agencies						
(a) Veterans Administration	None			2		232,000
(b) General Services Administration	None			15		61,155
(c) Federal Aviation Agency	None			6		26,800
TOTAL------------------------------------	None			23		319,955
6. U. S. Dept. of Defense						
(a) Air Force	None			1		500
(b) Army	None			17		1,730,044
(c) Corps of Engineers	None			4		1,080
(d) Navy	1		9,000[2]	13		639,975[15]
TOTAL------------------------------------	1		9,000	35		2,371,599

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

LOUISIANA

	Surface Water Body Receives Waste					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U. S. Dept. of Interior						
(a) Fish and Wildlife Service	1		450	4		60,350[3]
(b) National Park Service	1		350	None		
TOTAL----------------------------------	2		800	4		60,350
2. U. S. Treasury Dept.						
(a) U. S. Coast Guard	2		2,100	5		3,050
3. U. S. Dept. of Health, Educ., & Welfare						
(b) Public Health Service	1		180,000	1		7,189
4. Independent Agencies						
(a) Veterans Administration	None			1		107,000
5. U. S. Dept. of Defense						
(a) Air Force	1		700,000	2		753,000
(b) Army	7		477,000	12		20,700[2]
(c) Corps of Engineers	1		300	10		9,630[2]
(d) Navy	1		300,000	4		169,000[16]
TOTAL----------------------------------	10		1,477,300	28		952,330

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

LOUISIANA

	Ground Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U. S. Dept. of Interior						
(a) Fish and Wildlife Service	3		1,075	None		
(b) National Park Service	1		100	None		
(c) Bureau of Indian Affairs	1		210	None		
TOTAL-------------------------------------	5		1,385	None		
2. U. S. Treasury Dept.						
(a) U. S. Coast Guard	2		1,275	None		
3. U. S. Dept. of Agriculture						
(a) Agriculture Research Service	16		12,086	None		
(b) Forest Service	34		20,065	2	25	40
TOTAL-------------------------------------	50		32,151	2	25	40
4. U. S. Dept. of Defense						
(a) Air Force	2		10,380	None		
(b) Army	6		2,140	2		2,632[14]
(c) Corps of Engineers	21	3,680	0	3	162	2,612[2]
(d) Navy	2		120	None		
TOTAL-------------------------------------	31	3,680	12,640	5	162	5,244

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

NEW MEXICO

	Public Utility Sewer System Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U.S. Dept. of Interior						
(a) National Park Service	None			2		650
(b) Bureau of Indian Affairs	None			4		361,100
(c) Bureau of Reclamation	None			5		3,660
TOTAL	None			11		365,410
2. U.S. Post Office Dept.	None			12		9,180
3. U.S. Dept. of State	None			1		475
4. U.S. Dept. of Health, Education, & Welfare						
(a) Office of Education	None			4		101,766
(b) Public Health Service	None			20		69,080
TOTAL	None			24		170,846
5. U.S. Dept. of Agriculture						
(a) Forest Service	None			8		2,240
6. Independent Agencies						
(a) Veterans Administration	None			1		131,000
(b) General Services Administration	None			12		117,160
(c) Atomic Energy Commission	None			3		774,092[8]
TOTAL	None			16		1,076,252
7. U.S. Dept. of Defense						
(a) Air Force	1		25,000[2]	1		750,000
(b) Army				7		591,549
(c) Navy	1		62,000	4		496
TOTAL	2		87,000	12		1,342,045

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

NEW MEXICO

	Surface Water Body Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Vollume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U.S. Dept. of Interior						
(a) Fish & Wildlife Service	None			4		4,440,000[2]
(b) National Park Service	None			1		200
(c) Bureau of Indian Affairs	1		5,000	None		
(d) Bureau of Reclamation	1		2,100	None		
TOTAL----------------------------------	2		7,100	5		4,440,200
2. U.S. Dept. of Health, Education, & Welfare						
(a) Public Health Service	1		720	None		
3. Department of Defense						
(a) Air Force	1		9,000			
(b) Army	1		15,400			
TOTAL----------------------------------	2		24,400			

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

NEW MEXICO

		Ground Receives Wastes					
		Treated			Untreated		
		Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1.	U.S. Dept. of Interior						
	(a) Bureau of Mines	1		15,000	1		30,000 1/
	(b) Fish & Wildlife Service	1		500	5		2,830
	(c) National Park Service	12		40,897	9	55	2,017
	(d) Bureau of Indian Affairs	56		914,290			
	(e) Bureau of Reclamation	10		5,690	19	6	19,900
	TOTAL----------------------------------	80		976,377	34	61	54,747
2.	U.S. Dept. of Justice						
	(a) Immunization and Naturalization Service	2		550			
3.	U.S. Dept. of State	1		200			
4.	U.S. Dept. of Health, Education, & Welfare						
	(a) Public Health Service	1		4,000			
5.	U.S. Department of Agriculture						
	(a) Agricultural Research Service	4		51,160			
	(b) Forest Service	74		18,056 7/	53	3,323	
	(c) Soil Conservation Service				1		25
	TOTAL----------------------------------	78		69,216	54	3,323	25

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

NEW MEXICO

	Ground Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
6. Independent Agencies						
(a) Veterans Administration	1		70,000	1		21,000[1]
(b) Federal Aviation Agency	1		300			
(c) Atomic Energy Commission	4		1,194,000[9]	1		140,000[2]
TOTAL	6		1,264,300	2		161,000
7. Department of Defense						
(a) Air Force	16		968,190[17]	3		55,300[18]
(b) Army	6		236,662	1		1,000[2]
(c) Corps of Engineers	3		20,205	3	399	
(d) Navy	1		300	2		6,700[19]
TOTAL	26		1,225,357	9	399	63,000

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

OKLAHOMA

	Public Utility Sewer System Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U.S. Dept. of Interior						
(a) Bureau of Mines				2		25,615
(b) National Park Service				1		8,000
(c) Bureau of Indian Affairs				4		109,860
(d) Bureau of Reclamation				1		5,000
TOTAL----------------------------------				8		148,475
2. U.S. Dept. of Justice						
(a) Federal Prison Industries				1		3,870
TOTAL----------------------------------				1		3,870
3. U.S. Post Office Dept.				69		86,049
4. U.S. Dept. of Health, Education, & Welfare						
(a) Office of Education				1		27,750
(b) Public Health Service				14		138,875
TOTAL----------------------------------				15		166,625
5. U.S. Dept. of Agriculture						
(a) Agricultural Research Service				3		5,098
(b) Forest Service				2		600
TOTAL----------------------------------				5		5,698

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges

OKLAHOMA

	Public Utility Sewer System Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
6. Independent Agencies						
(a) Veterans Administration				2		165,000
(b) General Services Administration				11		34,790
(c) Federal Aviation Agency				9		212,350
(d) Housing and Home Finance Agency				2		51,100
TOTAL----------------------------------				24		463,240
7. U.S. Dept. of Defense						
(a) Air Force	None			1		118,000
(b) Army	None			21		620,900
(c) Corps of Engineers	None			1		200
(d) Navy	1		500,000	6		488,090 22/
TOTAL----------------------------------	1		500,000	29		1,227,190

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

OKLAHOMA

	Surface Water Body Receives Waste					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U.S. Dept. of Interior						
(a) Bureau of Mines				None		
(b) Fish and Wildlife Service				1		2,880,000[2]
(c) Bureau of Indian Affairs	1		40,000			
TOTAL----------------------------------	1		40,000	1		2,880,000
2. U.S. Post Office Dept.				1		50
3. U.S. Dept. of Health, Education, & Welfare						
(a) Public Health Service	1		10,000			
TOTAL----------------------------------	1		10,000			
4. U.S. Dept. of Defense						
(a) Air Force	5		2,528,200	4		2,482,170[20]
(b) Army	2		1,807,000	1		1,000
(c) Corps of Engineers	2		800	None		
(d) Navy	1		503,000[23]	None		
TOTAL----------------------------------	10		4,839,000	5		2,483,170

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

OKLAHOMA

	Ground Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U.S. Dept. of Interior						
(a) Bureau of Mines	1		12,000	1		20,000 1/
(b) Fish and Wildlife Service	1		3,500	18	200	3,940
(c) National Park Service				1		300
(d) Bureau of Indian Affairs	4		58,625			
(e) Bureau of Reclamation				8		4,000
TOTAL----------------------------------	6		74,125	28	200	28,240
2. U.S. Dept. of Justice						
(a) Bureau of Prisons	1		216,000			
TOTAL----------------------------------	1		216,000			
3. U.S. Dept. of Health, Education, and Welfare						
(a) Public Health Service	5		80,200			
TOTAL----------------------------------	5		80,200			
4. U.S. Dept. of Agriculture						
(a) Agricultural Research Service	2		95			
(b) Forest Service	7		6,105	2	260	
(c) Soil Conservation Service	1		180			
TOTAL----------------------------------	10		6,380	2	260	
5. Independent Agencies						
(a) Federal Aviation Agency				1		9,000 2/
TOTAL----------------------------------				1		9,000

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

OKLAHOMA

	Ground Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
6. U.S. Dept. of Defense						
(a) Air Force	9		125,400[21]	3	10	465[2]
(b) Army	11		13,985	26	7,835	
(c) Corps of Engineers	92		256,075	100	11,782	
(d) Navy	2		270			
TOTAL------------------------------------	114		395,730	129	19,627	465

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

TEXAS

	Public Utility Sewer System Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U. S. Dept. of Interior						
(b) Fish & Wildlife Service	None			5		1,319,300[4/]
2. U. S. Dept. of Justice						
(a) Federal Prison Industries	None			3		3,775
(b) Immunization & Natural. Service	None			10		25,565
(c) Bureau of Prisons	None			1		170,000
TOTAL------------------------------------	None			14		199,340
3. U. S. Post Office Dept.	None			158		227,317
4. U. S. Dept. of State	None			4		1,172
5. U. S. Treasury Dept.						
(a) Bureau of Customs	None			3		1,050
(b) U. S. Coast Guard	None			3		14,050
TOTAL------------------------------------	None			6		15,100
6. U. S. Dept. of Health, Educ., & Welfare						
(a) Office of Education	None			6		110,970
(b) Public Health Service	None			2		154,400
TOTAL------------------------------------	None			8		265,370

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

TEXAS

	Public Utility Sewer System Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
7. U. S. Dept. of Agriculture						
(a) Agriculture Marketing Service	None			3		850
(b) Agriculture Research Service	None			3		4,710
(c) Forest Service	None			3		500
(d) Soil Conservation Service	None			1		340
TOTAL------------------------------------	None			10		6,400
8. Independent Agencies						
(a) Veterans Administration	None			9		1,156,000
(b) General Services Administration	None			60		264,112
(c) Federal Aviation Agency	None			35		170,250
TOTAL------------------------------------	None			104		1,590,362
9. U. S. Dept. of Defense						
(a) Air Force	None			18		14,163,543 23/
(b) Army	None			51		5,257,762
(c) Corps of Engineers	None			4		4,400 23/
(d) Navy	None			38		241,958
TOTAL------------------------------------	None			111		19,667,663

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

TEXAS

	Surface Water Body Receives Waste					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U.S. Dept. of Commerce						
(a) Maritime Administration				1	65	
TOTAL------------------------------------				1	65	
2. U.S. Dept. of Interior						
(a) Fish and Wildlife Service				3		4,400,000[2/]
(b) Bureau of Reclamation				2		300
TOTAL------------------------------------				5		4,400,300
3. U.S. Post Office Dept.				1		315
4. U.S. Dept. of State	4		3,250	1		680
5. U.S. Treasury Dept.						
(a) U.S. Coast Guard	1		4,500	4		15,875
TOTAL------------------------------------	1		4,500	4		15,875
6. U.S. Dept. of Agriculture						
(a) Agricultural Research Service	1		1,250			
(b) Forest Service				2		6,000[2/]
TOTAL------------------------------------	1		1,250	2		6,000
7. Independent Agencies						
(a) Veterans Administration	1		116,000			
(b) Atomic Energy Commission	2		1,593,100[10/]			
TOTAL------------------------------------	3		1,709,100			

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

TEXAS

	Surface Water Body Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
8. U.S. Dept. of Defense						
(a) Air Force	10		5,306,909[24]	4		29,283,000[25]
(b) Army	20		4,610,597[27]	25		37,030
(c) Corps of Engineers	1		5,000	2		5,200[2]
(d) Navy	6		2,077,724[29]	7		691,800[2]
TOTAL-------------------------------------	37		12,000,230	38		30,017,030

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

TEXAS

			Ground Receives Wastes			
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U.S. Dept. of Commerce						
(a) Weather Bureau	1		100	1		30
(b) Maritime Administration	1		1,200			
TOTAL------------------------------------	2		1,300	1		30
2. U.S. Dept. of Interior						
(a) Bureau of Mines	2		71,000	2		209,000
(b) Fish and Wildlife Service				15	18	163,803 1/
(c) National Park Service	12		12,896			
(d) Bureau of Reclamation	3		867	6	15	3,500
TOTAL------------------------------------	17		84,763	23	33	376,303
3. U.S. Dept. of Justice						
(a) and Naturalization Service	13		7,375			
(b) Bureau of Prisons	2		220,000			
TOTAL------------------------------------	15		227,375			
4. U.S. Dept. of State	4		6,550	1	50	
5. U.S. Treasury Dept.						
(a) U.S. Coast Guard	4		6,950			
TOTAL------------------------------------	4		6,950			

TABLE NO. XVII (Con't)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

TEXAS

	Ground Receives Wastes					
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
6. U.S. Dept. of Health, Education, & Welfare						
(a) Public Health Service	1		130			
7. U.S. Dept. of Agriculture						
(a) Agricultural Research Service	4		8,770	6		9,471[6]
(b) Forest Service	24		18,548	19	809	
TOTAL------------------------------------	28		27,318	15	809	9,471
8. Independent Agencies						
(a) Federal Communications Commission	2		250			
(b) General Services Administration	1		500			
TOTAL------------------------------------	3		750			
9. U.S. Dept. of Defense						
(a) Air Force	20		769,820	10	70	90,500[26]
(b) Army	28		71,393	37	3,251	1,500
(c) Corps of Engineers	92	750	75,537	105	13,641	5,950[2]
(d) Navy	3		1,975	1		64
TOTAL------------------------------------	143	750	918,725	153	16,962	98,014

2

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

REGION VII

		Public Utility Sewer System Receives Wastes					
		Treated			Untreated		
		Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1.	U.S. Dept. of Commerce	None			None		
2.	U.S. Dept. of Interior	None			24		1,962,385
3.	U.S. Dept. of Justice	None			15		203,210
4.	U.S. Post Office Dept.	None			341		374,505
5.	U.S. Dept. of State	None			5		1,647
6.	U.S. Treasury Dept.	None			10		31,500
7.	U.S. Dept. of Health, Education, & Welfare	None			48		613,329
8.	U.S. Dept. of Agriculture	None			39		114,433
9.	Independent Agencies (Total)	None			186		3,910,249
10.	U.S. Dept. of Defense	4		596,000	213		25,356,462
	TOTALS-------------------------------------	4		596,000	881		32,567,720

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

REGION VII

		Surface Water Body Receives Wastes				
	Treated			Untreated		
	Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1. U.S. Dept. of Commerce	None			1	65	
2. U.S. Dept. of Interior	5		47,900	21		18,745,861
3. U.S. Dept. of Justice	None			None		
4. U.S. Post Office Dept.	None			2		365
5. U.S. Dept. of State	4		3,250	1		680
6. U.S. Treasury Dept.	3		6,600	9		18,925
7. U.S. Dept. of Health, Education, & Welfare	3		190,720	1		7,189
8. U.S. Dept. of Agriculture	None			3		11,000
9. Independent Agencies (Total)	3		1,709,000	1		107,000
10. U.S. Dept. of Defense	67		20,231,649	80		35,365,000
TOTAL-------------------------------------	85		22,189,119	119	65	54,256,020

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

REGION VII

		Ground Receives Wastes					
		Treated			Untreated		
		Number	People/Day Served	Volume Gallons/Day	Number	People/Day Served	Volume Gallons/Day
1.	U.S. Dept. of Commerce	2		1,300	1		30
2.	U.S. Dept. of Interior	114		1,143,675	88	294	300,807
3.	U.S. Dept. of Justice	18		443,925	None		
4.	U.S. Post Office Dept.	None			None		
5.	U.S. Dept. of State	4		6,550	1	50	
6.	U.S. Treasury Dept.	6		8,225	None		
7.	U.S. Dept. of Health, Education, & Welfare	7		84,500	None		
8.	U.S. Dept. of Agriculture	202		168,826	96	5,172	9,536
9.	Independent Agencies (Total)	9		1,265,050	4		170,350
10.	U.S. Dept. of Defense	339	5,365	2,610,282	355	46,756	167,173
	TOTALS-------------------------------------	701	5,365	5,732,333	545	52,272	647,896

Net: Number Waste Sources 2,335

Waste Quantity
Gallons/Day 115,989,008
People/Day 57,702

TABLE NO. XVII (Cont'd)
WASTE SOURCES IN REGION VII
(Grouped According to Waste Discharges)

FOOTNOTES

1/ Industrial Waste - 100% Cooling.
2/ Industrial Waste.
3/ Includes 57,600 GPD Ind. Waste.
4/ Includes 1,300,000 Ind. Waste.
5/ Includes one installation discharging 200 GPD Ind. Waste.
6/ Includes 8,266 GPD Waates of which 50% is treated.
7/ Includes 1,200 GPD Wastes of which 30% is treated.
8/ Includes 54,764 GPD Ind. Wastes of which 70% is cooling and 1% is treated.
9/ Includes 40,000 GPD Ind. Wastes.
10/ Includes 210,000 GPD - 100% Cooling Water.
11/ Includes 159,653 GPD Ind. Wastes.
12/ Includes 1,000 GPD Ind. Wastes.
13/ Includes 1,725,000 GPD Ind. Wastes.
14/ Includes 2,612 Gal. Ind. Wastes.
15/ Includes 420,000 Gal. Ind. Wastes.
16/ Includes 119,000 Gal. Ind. Wastes.
17/ Includes 25,000 Gal. Ind. Wastes.
18/ Includes 50,100 Gal. Ind. Wastes.
19/ Includes 1,700 Gal. Ind. Wastes.
20/ Includes 1,114,516 Gal. of Ind. Waste with one facility providing treatment to 20% of 364,516 Gal.
21/ Includes 20,000 Gal. of Ind. Wastes.
22/ Includes 485,000 Gal. of Industrial Wastes.
23/ Includes 499,000 of which only 72% is treated.
24/ Includes 103,609 Ind. Wastes.
25/ All Ind. Waste of which 29,000,000 Gal. is Cooling Water.
26/ Includes 61,900 Gal. per day Ind. Wastes.
27/ Includes 46,600 Gal. per day Ind. Wastes.
28/ Includes 2,000 Gal. per day Ind. Wastes.
29/ Includes 234,000 Gal. per day Ind. Wastes.

TABLE NO. XVIII

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
ARKANSAS				
Department of Agriculture				
Forest Service				
Fort Douglas	Sanitary	2 People	1	No
Lake Sylvia	Sanitary	90 People	1	No
Ouachita National Forest	Sanitary	50 People	2	No
Ouachita National Forest	Industrial	5,000 Gal.	1	No
Ozark National Forest	Sanitary	598 People	19	No
Shady Lake	Sanitary	15 People	1	No
Department of Defense				
Army				
Corps of Engineers				
Beaver Reservoir	Sanitary	75 People	1	Yes
Blakely Mountain Dam and Reservoir	Sanitary	4,288 People	14	Yes
Blakely Mountain Dam and Reservoir	Sanitary	15,000 Gal.	1	Yes
Blue Mountain Dam and Reservoir	Sanitary	360 People	4	Yes
Bull Shoals Reservoir	Sanitary	1,017 People	7	Yes
Cricket Creek Boat Dock	Sanitary	45 People	1	No
Lock and Dam No. 6	Sanitary	360 Gal.	1	No
Lock and Dam No. 88	Sanitary	510 Gal.	1	No
Narrows Dam and Reservoir	Sanitary	1,060 People	11	Yes
Narrows Dam and Reservoir	Sanitary	2,500 Gal.	1	Yes

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
Corps of Engineers (Cont'd)				
Nimrod Dam and Reservoir	Sanitary	408 People	5	Yes
Norfolk Dam and Reservoir	Sanitary	1,027 People	15	Yes
West Memphis District Office	Sanitary	4,000 Gal.	1	Yes
Fort Chaffee	Sanitary	150,000 Gal.	1	Yes
Pine Bluff Arsenal	Industrial	1,725,000 Gal.	2	Yes
Navy				
Helena Reserve Electronics Facility	Sanitary	100 Gal.	1	No
Department of Interior				
Fish and Wildlife Service				
Big Lake National Wildlife Refuge	Sanitary	200 Gal.	1	No
Corning National Fish Hatchery	Industrial	47,811 Gal.	1	Yes
Norfolk National Fish Hatchery	Industrial	6,480,000 Gal.	1	Yes
White River National Wildlife Refuge	Industrial	1,200 Gal.	1	No
National Park Service				
Hot Springs National Park	Sanitary	435,000 Gal.	1	Yes

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
LOUISIANA				
Department of Agriculture				
Forest Service				
Kisatchie National Forest	Sanitary	65 People	2	No
Department of Defense				
Air Force				
Barksdale Air Force Base	Sanitary	330,000 Gal.	1	Yes
Barksdale Air Force Base	Industrial	5,203 Gal.	1	Yes
England Air Force Base	Sanitary	373,000 Gal.	1	Yes
Nike Barksdale	Industrial	14,000 Gal.	4	Yes
Army				
Alexandria U.S.A.R.	Industrial	800 Gal.	1	No
Baton Rouge U.S.A.R.	Industrial	2,000 Gal.	1	No
Bogalusa U.S.A.R.	Industrial	800 Gal.	1	No
Corps of Engineers				
Bayou Boeuf Lock	Sanitary	12 People	1	No
Delta Casting Plant	Sanitary	105 People	1	No
Gulf Outlet Project Office	Sanitary	100 Gal.	1	No
Inter-Harbor Navigation Canal Lock	Sanitary	250 Gal.	1	No
Lock and Dam No. 5	Sanitary	420 Gal.	1	No
New Orleans District Office	Sanitary	3,100 Gal.	1	Yes
Paris Bridge Road	Sanitary	100 Gal.	1	No

TABLE NO. SVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
Corps of Engineers (Cont'd)				
Shreveport Area Office	Sanitary	100 Gal.	1	No
Venice Sub. Office	Sanitary	100 Gal.	1	No
Vidalia Office	Sanitary	110 Gal.	1	No
Fort Polk	Sanitary	20 Gal.	1	Yes
Fort Polk	Industrial	26,112 Gal.	1	Yes
Hammond U.S.A.R.	Industrial	800 Gal.	1	No
Houma U.S.A.R.	Industrial	400 Gal.	1	No
Lafayette U.S.A.R.	Industrial	300 Gal.	1	No
Monroe U.S.A.R.	Industrial	800 Gal.	1	No
Spring Hill U.S.A.R.	Industrial	800 Gal.	1	No
Navy				
Todd Shipyard	Industrial	74,000 Gal.	1	Yes
Todd Shipyard	Sanitary	40,000 Gal.	1	Yes
Naval CNO	Sanitary	45,000 Gal.	1	Yes
Naval CNO	Industrial	10,000 Gal.	1	Yes
Department of Health, Education, and Welfare				
Public Health Service				
Quarantine Station	Sanitary	7,189 Gal.	1	Yes
Department of Interior				
Fish and Wildlife Service				
Delta National Wildlife Refuge	Sanitary	2,750 Gal.	3	No
Natchitoches National Fish Hatchery	Industrial	57,600 Gal.	1	Yes

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
Department of the Treasury				
U. S. Coast Guard				
Atchafalaya River L.A.S.	Sanitary	50 Gal.	1	No
Head of Pass W.O. Light Station	Sanitary	1,000 Gal.	1	No
South Pass Range Light Station	Sanitary	300 Gal.	1	No
South Pass W.J.R.F. Light Station	Sanitary	600 Gal.	1	No
Southwest Pass Light Station	Sanitary	1,600 Gal.	1	No
Independent Agency				
Veterans Administration				
Pineville V. A. Hospital	Sanitary	107,000 Gal.	1	Yes

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste Type	Waste Quantity/Day	Number of Discharges	PHS Has Surveyed
NEW MEXICO				
Department of Agriculture				
Forest Service				
Apache National Forest	Sanitary	321 People	6	No
Carson National Forest	Sanitary	85 People	21	No
Carson National Forest	Sanitary	1,200 Gal.*	1	No
Cibola National Forest	Sanitary	1,244 People	28	No
Cibola National Forest	Sanitary	445 Gal.	3	No
Cole Springs	Sanitary	50 People	1	No
Gila National Forest	Sanitary	201 People	8	No
Las Hertas Pićnic Site	Sanitary	75 People	1	No
Lincoln National Forest	Sanitary	1,416 People	11	No
Lincoln National Forest	Sanitary	170 Gal.	1	No
Mills Canyon Camp Ground	Sanitary	4 People	1	No
Ojo Redondo Camp Ground	Sanitary	1 People	1	No
Red Cloud Camp Ground	Sanitary	1 People	1	No
Santa Fe National Forest	Sanitary	32 People	4	No
Sitting Bull Falls	Sanitary	25 People	1	No
Department of Defense				
Air Force				
Kirtland Air Force Base	Industrial	5,300 Gal.	2	Yes
Walker Air Force Base	Industrial	50,000 Gal.	1	Yes

* 30 Percent of volume is treated.

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
Department of Defense (Cont'd)				
Army				
Corps of Engineers				
Concha Dam	Sanitary	818 People	2	Yes
Jemez Canyon Dam	Sanitary	81 People	1	Yes
Fort Wingate Ordinance Depot	Industrial	1,000 Gal.	1	Yes
Navy				
Ordinance Missile Test Facility	Sanitary	5,000 Gal.	1	Yes
Ordinance Missile Test Facility	Industrial	1,700 Gal.	1	Yes
Department of Interior				
Bureau of Mines				
Navajo Helium Plant	Industrial	30,000 Gal.	1	No
Bureau of Reclamation				
Carlsbad Dam Project	Sanitary	500 Gal.	1	No
Middle Rio Grande Project	Sanitary	3,500 Gal.	5	No
Navajo Dam	Sanitary	11,400 Gal.	2	Yes
Tucumcari Project	Sanitary	4,500 Gal.	9	No
Fish and Wildlife Service				
Bitter Lake National Wildlife Refuge	Sanitary	500 Gal.	1	No
Dexter National Fish Hatchery	Sanitary	500 Gal.	1	Yes

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
Fish and Wildlife Service (Cont'd)				
Dexter National Fish Hatchery	Industrial	120,000 Gal.	1	Yes
Eagle Nest Fish Hatchery	Sanitary	150 Gal.	1	Yes
Eagle Nest Fish Hatchery	Industrial	288,000 Gal.	1	Yes
Hot Springs National Fish Hatchery	Sanitary	880 Gal.	1	Yes
Hot Springs National Fish Hatchery	Industrial	1,152,000 Gal.	1	Yes
Santa Rosa National Fish Hatchery	Sanitary	800 People	1	Yes
Santa Rosa National Fish Hatchery	Industrial	2,880,000 Gal.	1	Yes
National Park Service				
Aztec Ruins	Sanitary	1,020 Gal.	2	No
Chaco Canyon National Monument	Sanitary	897 Gal.	4	No
Chaco Canyon National Monument	Sanitary	20 People	2	No
El Moro National Monument	Sanitary	300 Gal.	1	No
El Moro National Monument	Sanitary	35 People	1	No
Independent Agencies				
Atomic Energy Commission				
Sandia Area Office	Industrial	140,000 Gal.	1	Yes
Veterans Administration				
Albuquerque V. A. Hospital	Industrial	21,000 Gal.	1	No

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste Type	Waste Quantity/Day	Number of Discharges	PHS Has Surveyed
OKLAHOMA				
Department of Agriculture				
Forest Service				
Ouachita National Forest	Sanitary	50 People	1	No
Department of Defense				
Air Force				
Clinton Sherman Air Force Base	Sanitary	10 People	2	Yes
Clinton Sherman Air Force Base	Industrial	1,060 Gal.	2	Yes
Davis Field	Sanitary	2,054 Gal.	1	Yes
Tinker Air Force Base	Industrial	2,075,000 Gal.	2	Yes
Vance Air Force Base	Industrial	40,000 Gal.	1	Yes
Army				
Camp Grubber	Sanitary	1,000 Gal.	1	No
Fort Sill	Sanitary	13,375 People	33	Yes
Corps of Engineers				
Canton Dam and Reservoir	Sanitary	115 People	5	Yes
Denison Dam - Lake Texoma	Sanitary	1,515 People	26	Yes
Denison Dam - Lake Texoma	Sanitary	200 Gal.	1	Yes
Eufaula Reservoir	Sanitary	600 Gal.	1	Yes
Fort Gibson Dam and Reservoir	Sanitary	1,241 People	18	Yes
Fort Supply Dam and Reservoir	Sanitary	70 People	2	Yes
Great Salt Plains Dam and Reservoir	Sanitary	150 People	4	Yes

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
Corps of Engineers (Cont'd)				
Heyburn Dam	Sanitary	660 People	5	Yes
Hulah Dam	Sanitary	130 People	7	Yes
Keystone Dam and Reservoir	Sanitary	500 People	1	Yes
Oologah Dam and Reservoir	Sanitary	100 People	1	Yes
Tenkiller Dam	Sanitary	751 People	16	Yes
Wister Dam and Reservoir	Sanitary	300 People	6	Yes
Perry National Guard Range	Sanitary	100 People	1	No
Department of Interior				
Bureau of Mines				
Keys Helium Plant	Industrial	20,000 Gal.	1	No
Bureau of Reclamation				
Austin Project	Sanitary	3,000 Gal.	6	No
Washita Basin Project	Sanitary	1,000 Gal.	2	No
Fish and Wildlife Service				
Great Salt Plains Reservoir	Sanitary	650 Gal.	2	No
Great Salt Plains Reservoir	Sanitary	5 People	2	No
Tishomingo National Fish Hatchery	Sanitary	1,000 Gal.	1	Yes
Tishomingo National Fish Hatchery	Industrial	2,880,000 Gal.	1	Yes
Wichita Mountain National Wildlife Refuge	Sanitary	2,290 Gal.	4	No
Wichita Mountain National Wildlife Refuge	Sanitary	195 People	8	No

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
Independent Agency				
Federal Aviation Agency				
Oklahoma City Aeronautical Center	Industrial	9,000 Gal.	1	No

TABLE NO XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
TEXAS				
Department of Agriculture				
Agriculture Research Service				
El Paso Fumigation House	Sanitary	5 Gal.	1	No
Entomology Researsh Lab (Brownsville)	Sanitary	125 Gal,	1	No
Kerrville Insect Experiment Station	Sanitary	4,370 Gal.*	1	Yes
Laredo Fumigation House	Sanitary	940 Gal.	1	No
U. S. Pecan Field Station	Sanitary	135 Gal.	1	No
Forest Service				
Cross Timbers TX	Sanitary	3 People	1	No
Lake Marion	Sanitary	45 People	1	No
Lake McClellan	Sanitary	152 People	1	No
Northeast Texas TX	Sanitary	80 People	2	No
Texas National Forest	Sanitary	515 People	13	No
Texas National Forest	Industrial	6,000 Gal.	2	No
Texline	Sanitary	14 People	1	No
Department of Commerce				
Maritime Administration				
Beaumont Reserve Fleet	Sanitary	65 People	1	No

* 50 Percent of the volume treated

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
Department of Commerce (Cont'd)				
Weather Bureau				
Commerce Airport Station	Sanitary	30 Gal.	1	No
Department of Defense				
Air Force				
Air Force Plant No. 4	Industrial	29,500,000 Gal.	2	Yes
Air Force Plant No. 66	Industrial	5,000 Gal.	1	Yes
Bergstrom Air Force Base	Industrial	14,000 Gal.	3	Yes
Biggs Air Force Base	Sanitary	25,000 Gal.	1	Yes
Biggs Air Force Base	Industrial	1,200 Gal.	1	Yes
Carswell Air Force Base	Industrial	15,091 Gal.*	1	Yes
Connally Air Force Base	Industrial	50,000 Gal.	1	Yes
Dyess Air Force Base - Nike	Industrial	2,000 Gal.	1	Yes
Goodfellow S. A. Range	Sanitary	40 People	1	Yes
Harlingen Air Force Base	Industrial	25,000 Gal.	1	Yes
Laredo Air Force Base	Sanitary	3,500 Gal.	1	Yes
Laredo Air Force Base	Industrial	50,000 Gal.	1	Yes
Webb Air Force Base	Industrial	5,700 Gal.	3	Yes
Army				
Abilene U.S.A.R.	Industrial	200 Gal.	1	No
Beaumont U.S.A.R.	Industrial	1,800 Gal.	1	No

* 40 Percent of volume is treated

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
Army (Cont'd)				
Bryan U.S.A.R.	Industrial	800 Gal.	1	No
Caldwell U.S.A.R.	Industrial	100 Gal.	1	No
Camp Bowie	Industrial	600 Gal.	1	No
Camp Bullis	Sanitary	1,500 Gal.	1	Yes
Camp Bullis	Sanitary	1,407 People	7	Yes
Camp Swift	Sanitary	1,000 Gal.	1	No
Camp Wolters	Industrial	16,230 Gal.	1	Yes
Canyon Rifle Range	Sanitary	150 People	1	No
Cleburn U.S.A.R.	Industrial	200 Gal.	1	No
Cleveland U.S.A.R.	Industrial	200 Gal.	1	No
Corps of Engineers				
Belton Reservoir	Sanitary	1,315 People	10	Yes
Benbrook Reservoir	Sanitary	1,350 People	9	Yes
Cherokee Park	Sanitary	200 People	1	No
Dam B	Sanitary	75 People	1	Yes
Grapevine Reservoir	Sanitary	150 People	2	Yes
Hards Creek Reservoir	Sanitary	150 People	3	Yes
Highway 155 Area	Sanitary	100 People	1	No
Lake O'The Pines	Sanitary	700 People	9	Yes
Lake Texarkana	Sanitary	4,685 People	12	Yes
Lake Texoma	Sanitary	1,005 People	18	Yes
Lake Texoma	Sanitary	200 Gal.	1	Yes
Lake Texoma	Industrial	10,000 Gal.	2	Yes
Lavon Reservoir	Sanitary	1,550 People	10	Yes
Lewisville Reservoir	Sanitary	995 People	11	Yes
McGee Bend Reservoir	Sanitary	136 People	2	Yes
San Angeol Reservoir	Sanitary	550 People	4	Yes
Whitney Reservoir	Sanitary	4,685 People	11	Yes

TABLE NO XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste Type	Waste Quantity/Day	Number of Discharges	PHS Has Surveyed
Army (Cont'd)				
Dallas Defense Area	Industrial	1,800 Gal.	2	No
Dallas U.S.A.R.	Industrial	3,500 Gal.	3	No
Donna Rifle Range	Sanitary	150 People	1	No
Fort Hood	Industrial	4,000 Gal.	1	Yes
Fort Sam Houston	Sanitary	216 People	2	Yes
Fort Worth U.S.A.R.	Industrial	200 Gal.	1	No
Hamilton U.S.A.R.	Industrial	300 Gal.	1	No
Huntsville U.S.A.R.	Industrial	300 Gal.	1	No
Jasper U.S.A.R.	Industrial	400 Gal.	1	No
Kerns Rifle Range	Sanitary	150 People	1	No
Longhorn Ordinance	Industrial	211,000 Gal.	1	Yes
Longview U.S.A.R.	Industrial	600 Gal.	1	No
Port Arthur U.S.A.R.	Industrial	600 Gal.	1	No
Red River Arsenal	Sanitary	150 People	1	Yes
Sherman U.S.A.R.	Industrial	400 Gal.	1	No
Sonora U.S.A.R.	Industrial	300 Gal.	1	No
Texarkana U.S.A.R.	Industrial	300 Gal.	1	No
Waco U.S.A.R.	Industrial	800 Gal.	1	No
Wichita Falls U.S.A.R.	Industrial	400 Gal.	1	No
Navy				
Dallas Industrial Reserve Plant	Industrial	300,000 Gal.*	1	No
Dangerfield Research Lab	Industrial	23,000 Gal.	1	No
Orange Reserve Fleet	Sanitary	50,000 Gal.	1	No
Port Isabel Air Station	Sanitary	64 Gal.	1	No
Saginaw Industrial Reserve Plant	Industrial	1,500 Gal.	1	No
Todd Shipyard	Industrial	84,000 Gal.	1	No

* 15 Percent of the volume is treated

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste Type	Waste Quantity/Day	Number of Discharges	PHS Has Surveyed
Department of Interior				
Bureau of Mines				
Exell Helium Plant	Industrial	149,000 Gal.	1	No
Bureau of Reclamation				
Rio Grande Project	Sanitary	15 People	4	No
San Angelo Project	Sanitary	3,500 Gal.	2	No
Fish and Wildlife Service				
Arkansas National Wildlife Refuge	Sanitary	1,000 Gal.	3	No
Arkansas National Wildlife Refuge	Sanitary	16 People	2	No
Fort Worth National Fish Hatchery	Sanitary	750 Gal.	1	Yes
Fort Worth National Fish Hatchery	Industrial	1,400,000 Gal.	1	Yes
Galveston Biological Laboratory	Sanitary	100 Gal.	1	No
Granite Shoals Lake	Industrial	2,500,000 Gal.	1	No
Hagerman National Wildlife Refuge	Sanitary	300 Gal.	1	No
Hagerman National Wildlife Refuge	Sanitary	40 People	1	No
Laguna Acosta Wildlife Refuge	Sanitary	900 Gal.	2	No
Muleshoe National Wildlife Refuge	Sanitary	60 Gal.	1	No
Muleshoe National Wildlife Refuge	Sanitary	2 People	1	No
San Marcos National Fish Hatchery	Industrial	500,000 Gal.	1	Yes
Santa Anna National Wildlife Refuge	Sanitary	400 Gal.	1	No
Uvalde National Fish Hatchery	Sanitary	200 Gal.	1	Yes
Uvalde National Fish Hatchery	Industrial	159,653 Gal.	1	Yes

TABLE NO. XVIII (Cont'd)

FEDERAL INSTALLATIONS DISCHARGING UNTREATED WASTES

Agency Description and Location	Waste		Number of Discharges	PHS Has Surveyed
	Type	Quantity/Day		
Department of the Treasury				
U. S. Coast Guard				
Galveston Coast Guard Base	Sanitary	13,900 Gal.	1	No
Galveston Jetty Light Station	Sanitary	300 Gal.	1	No
Neches River Light Attention Station	Sanitary	75 Gal.	1	No
Port O'Connor Life Boat Station	Sanitary	1,600 Gal.	1	No
Post Office Department				
Austin Garage	Industrial	315 Gal.	1	No
Independent Agency				
International Boundary and Water Commission				
Falcon State Park	Sanitary	20 People	1	No
Fort Hancock Maintenance Yard	Sanitary	680 Gal.	1	No

INDUSTRIAL WASTE DISPOSAL PRACTICES

Plans are being developed with Arkansas, Louisiana, New Mexico, Oklahoma and Texas for an inventory of industrial wastes. This action resulted from a request to the Department of Health, Education and Welfare by the Chairman of the Subcommittee of Natural Resources and Power of the House Committee on Government Operations. Their suggestion and the follow-up action by the Public Health Service will fulfill a long standing need to complete a total inventory of liquid wastes entering our water resources. Information presently available varies from state to state in completeness and time of reference. The States of Texas, Arkansas and Louisiana have collected some industrial waste data. Oklahoma and New Mexico have not collected information in this area with the exception of a few problem areas.

NATIONAL WATER QUALITY NETWORK STATIONS

The Public Health Service program for providing fundamental information on the quality of the Nation's waters stems from Public Law 660, approved July 9, 1956, as amended by Public Law 87-88, July 20, 1961. The Secretary of the Department of Health, Education, and Welfare in cooperation with other Federal, State, and local agencies having related responsibilities, collect and disseminate basic data on chemical, physical, and biological water quality insofar as such data or other information relate to water pollution and the prevention and control thereof.

To fulfill this responsibility, the Public Health Service National Water Quality Network collects, interprets, and disseminates:

1. Information on changes in water quality at key points in river systems, as such quality may be affected by changes in water use and development.
2. Continuous information on the nature and extent of pollutants affecting water quality.
3. Data which will be useful in the development of comprehensive water resources programs.
4. Data which will assist State, interstate, and other agencies in their water pollution control programs, and in the selection of sites for legitimate water uses.

In Region VII there are nineteen network stations on major interstate rivers. Further, the station located at Little Rock, Arkansas serves as a research station testing equipment for the Arkansas Stream Control Commission, the Graduate Institute of Technology and the Public Health Service.

From network stations samples are collected and examined for the following:

1. Radiological - (weekly)
    - (1) Gross alpha
    - (2) Gross beta
    - (3) Strontium 90
2. Plankton population - (twice per month)
3. Coliform organisms - (weekly)
4. Organic chemicals - (monthly)
5. Biochemical, chemical, and physical measurements - (weekly)
6. Trace elements

Table XIX of this Chapter is a list of Network Stations located in Region VII with samples collected at each station indicated.

Water year 1962 data are included in this Chapter, following Table XIX. These data provide general information on water quality conditions existing in the Red River, Sabine River, and Rio Grande River at points wherein Network Stations are located. Data for water year 1963 are being assembled now for publication by the Robert A. Taft Sanitary Engineering Center. These data are also on file in the Region VII office in Dallas.

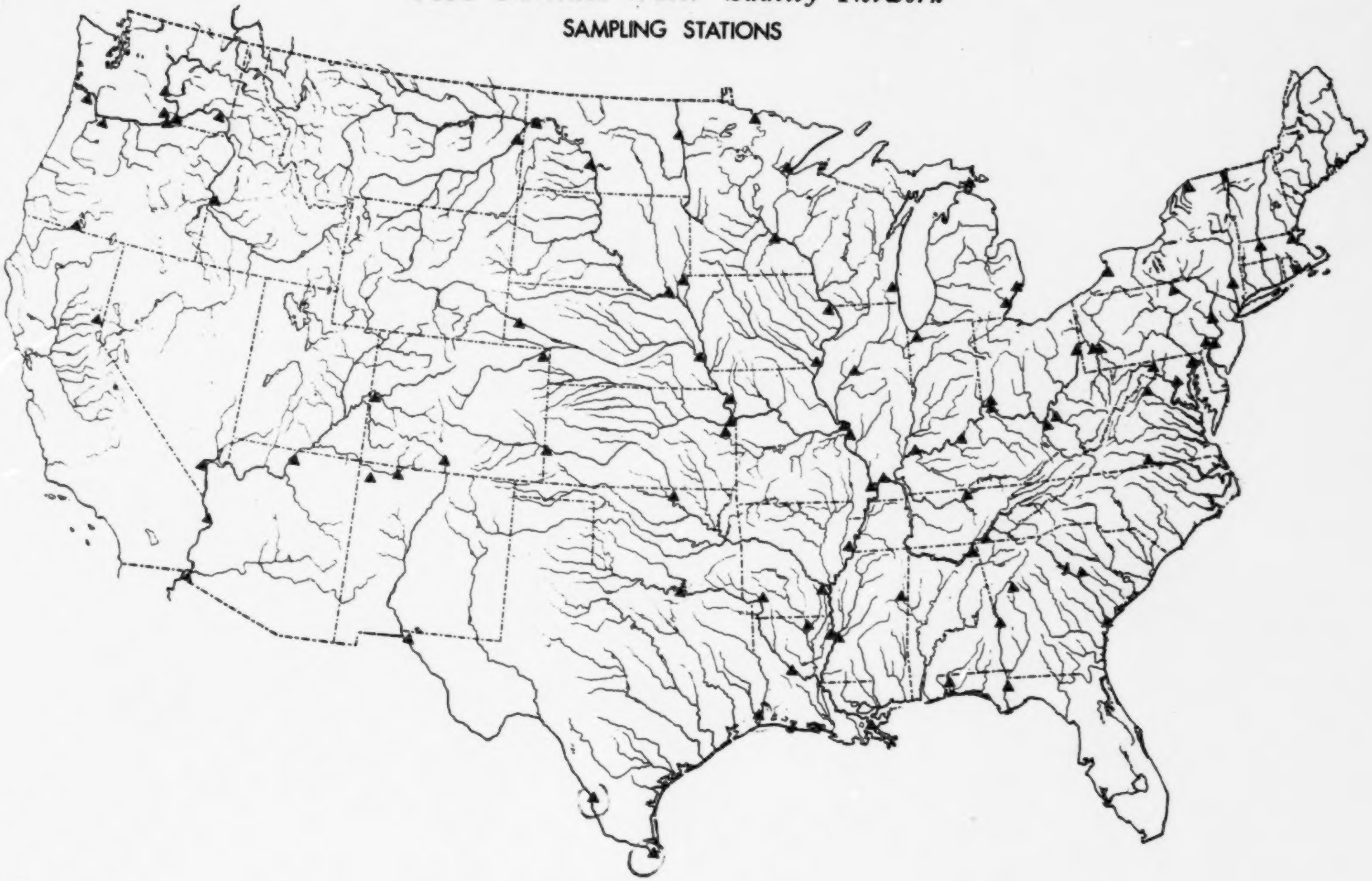
TABLE XIX - NATIONAL WATER QUALITY NETWORK STATIONS LOCATED IN REGION VII

"X" Indicates Station Collects Sample

River and Station Location	Radiological	Plankton Population	Coliform Organisms	Organic Chemical	Biochemical Chemical Physical	Trace Elements
Animas River						
Cedar Hill, New Mexico	X	X	X	X	X	X
Arkansas River						
Pendleton Ferry, Arkansas	X	X	X		X	X
Little Rock, Arkansas	X	X	X	X	X	X
Fort Smith, Arkansas	X	X	X		X	X
Ponca City, Oklahoma	X	X	X	X	X	X
Mississippi River						
New Orleans, Louisiana	X	X	X	X	X	X
Delta, Louisiana	X	X	X	X	X	X
West Memphis, Arkansas	X	X	X	X	X	X
Ouachita River						
Bastrop, Louisiana	X	X	X	X	X	X
Red River						
Alexandria, Louisiana	X	X	X	X	X	X
Bossier City, Louisiana	X	X			X	X
Index, Arkansas	X	X			X	X
Denison, Texas	X	X	X	X	X	X
Rio Grande River						
Brownsville, Texas	X	X	X	X	X	X
Laredo, Texas	X	X	X	X	X	X
El Paso, Texas	X	X	X	X	X	X
Sabine River						
Ruliff, Texas	X	X	X	X	X	X
San Juan River						
Shiprock, New Mexico	X	X	X	X	X	X
Verdigris River						
Nowata, Oklahoma	X	X	X	X	X	X

PHS National Water Quality Network

SAMPLING STATIONS



WATER QUALITY BASIC DATA

RADIOACTIVITY DETERMINATIONS

STATE TEXAS
MAJOR BASIN SOUTHWEST-LOWER MISSISSIPPI RIVER
MINOR BASIN LOWER RED RIVER BELOW DENISON
STATION LOCATION RED RIVER AT
DENISON, TEXAS

44

DATE SAMPLE TAKEN			DATE OF DETERMI-NATION		RADIOACTIVITY IN WATER						RADIOACTIVITY IN PLANKTON (dry)				RADIOACTIVITY IN WATER		
					ALPHA			BETA			DATE OF DETERMI-NATION		GROSS ACTIVITY		GROSS ACTIVITY		
					SUSPENDED	DISSOLVED	TOTAL	SUSPENDED	DISSOLVED	TOTAL			ALPHA	BETA	SUSPENDED	DISSOLVED	TOTAL
MO.	DAY	YEAR	MONTH	DAY	μμc/l	μμc/l	μμc/l	μμc/l	μμc/l	μμc/l	MO.	DAY	μμc/g	μμc/g	μμc/l	μμc/l	μμc/l
10	24	60*	11	7	0	11	11	0	0	0							
11	28	60*	12	7	9	45	54	24	9	33							
12	27	60*	1	20	0	10	10	0	0	0							
1	30	61*	2	8	0	2	2	0	0	0							
2	20	61*	3	23	1	1	2	0	0	0							
3	27	61*	4	7	0	0	0	0	0	0							
4	24	61*	5	8	0	2	2	0	0	0							
5	29	61*	6	6	0	16	16	0	0	0							
6	26	61*	7	13	0	6	6	0	0	0							
7	31	61*	8	25	0	1	1	0	0	0							
8	28	61*	9	15	0	1	1	0	0	0							
9	5	61	9	28	-	-	-	0	0	0							
9	11	61	10	2	0	0	0	0	2	2							
9	18	61	10	30	-	-	-	11	27	38							
9	25	61	10	5	-	-	-	12	28	40							

WATER QUALITY BASIC DATA

PLANKTON POPULATION

NUMBER PER MILLILITER, EXCEPT MACROPLANKTON

STATE	TEXAS
MAJOR BASIN	SOUTHWEST-LOWER MISSISSIPPI RIVER
MINOR BASIN	LOWER RED RIVER BELOW DENISON
STATION LOCATION	RED RIVER AT DENISON, TEXAS

DATE OF SAMPLE			ALGAE (Number per ml.)									INERT DIATOM SHELLS (No. per ml.)		DIATOMS DOMINANT SPECIES AND PERCENTAGES (See Introduction for Code Identification*)									OTHER MICROPLANKTON, FUNGI AND SMALLER BACTERIA (No. per ml.)	MICROINVERTEBRATES					DOMINANT GENERA (See Introduction for Identification)
				BLUE-GREEN		GREEN		FLAGELLATES (Pigmented)		DIATOMS																			
MONTH	DAY	YEAR	TOTAL	COCCOID	FILAMENTOUS	COCCOID	FILAMENTOUS	GREEN	OTHER	CENTRIC	PENNATE	CENTRIC	PENNATE	FIRST*	PERCENTAGE	SECOND*	PERCENTAGE	THIRD*	PERCENTAGE	FOURTH*	PERCENTAGE	OTHER PERCENTAGE		PROTOZOA (No. per ml.)	ROTIFERS (No. per liter)	CRUSTACEA (No. per liter)	NEMATODES (No. per liter)	OTHER ANIMAL FORMS (No. per liter)	
10	17	60	1600	70		180				110	1270	130	250	38	80	26	*	58	*	56	*	10			2				----3
11	7	60	2800		90	270		90		710	1670	360	250	38	70	57	*	26	*	18	*	20	130	30	1				4---3
11	21	60	1300	20		70		240		240	770		110	38	90	26	*						310			6			---33
12	5	60	1400		20	670				50	690	50	290	88	40	56	*					10			1				--8-3
12	19	60	1700			40		130		130	1410	40	90	38	90	84	*	26	*			10	20			2			----3
1	4	61	3900			1120		340	70	50	2280	20	130	38	80	80	20	82	*	92	*	10		10	8	12			--8-3
1	11	61	2700	40		760		290	20	70	1520	70	380	38	90	82	10	80	*	92	*			90	18	23			-18-3
2	6	61	700	90		220		70	50		270		220	38	60	58	20	92	10	93	10	10		20	23	7			--8-3
3	6	61	1100			600		360	20	90	70	50	70	38	20	80	10	93	10	92	10	50			3	12			--83-
3	20	61	1500			580		690		130	110	90	90	38	50	80	10	92	10	71	10	30	160		21	24			-1-3-
4	11	61	1800			1360		110		40	270		200	38	30	80	30	26	10	56	*	30			2	16		1	--823
5	1	61	3000	100		2150				390	310	40	190	80	80	26	10	38	10	80	*	50	20	10		7			--813
5	15	61	3000	580		1560		90		220	510	70	1010	80	60	38	10	26	10	92	*	20		10	6	3			-88-3
6	5	61	700			200		40		50	400	110	600	80	40	38	30	26	*	31	*	20		10					----3
6	19	61	900			220		540	20		90		200	38	50	80	20	26	10	56	*	30		20	3				-1---
7	[illegible]	61	1300			680		190		210	230	80	350	38	30	49	20	80	10	46	10	30		10	3	5			-8-2-
7	17	61	300			440		190		100	100		20	38	40	80	10	70	*	65	*	40			9	1			--8--
8	7	61	700		20	270		120		60	190	20	60	38	50	95	10	92	*	26	*	40							--8--
8	21	61	400	20		60		50		20	290	20		38	60	97	10	26	*	92	*	20							----3
9	5	61									20																		-----
9	18	61	200	20		70		20			90	20													9	1			-----

NATIONAL WATER QUALITY NETWORK

ORGANIC CHEMICALS

RECOVERED BY CARBON FILTER TECHNIQUE

RESULTS IN MICROGRAMS PER LITER
(Parts per billion)

STATE TEXAS
MAJOR BASIN SOUTHWEST-LOWER MISSISSIPPI RIVER
MINOR BASIN LOWER RED RIVER BELOW DENISON
STATION LOCATION RED RIVER AT
DENISON, TEXAS

44

DATE OF SAMPLE					GALLONS FILTERED	EXTRACTABLES			CHLOROFORM EXTRACTABLES										
BEGINNING			END								NEUTRALS								
MONTH	DAY	YEAR	MONTH	DAY		TOTAL	CHLOROFORM	ALCOHOL	ETHER INSOLUBLES	WATER SOLUBLES	TOTAL	ALIPHATICS	AROMATICS	OXYGENATED COMPOUNDS	LOSS	WEAK ACIDS	STRONG ACIDS	BASES	LOSS
10	3	60	10	10	4740	280	64	216	2	18	17	2	1	14	0	7	7	2	11
11	7	60	11	21	7300	195	46	149	1	13	10	0	1	9	0	5	5	1	11
12	5	60	12	19	4850	291	52	239	1	12	15	0	0	13	2	6	3	2	13
1	12	61	1	20	5210	209	60	149	2	16	13	1	1	11	0	7	5	2	15
2	6	61	2	13	5040	250	54	196	2	15	12	0	0	11	1	5	4	2	14
3	8	61	3	16	5350	210	49	161	1	12	13	1	1	10	1	6	4	2	11
4	3	61	4	10	5070	254	73	181	-	-	-	-	-	-	-	-	-	-	-
5	1	61	5	9	5680	248	92	156	-	-	-	-	-	-	-	-	-	-	-
6	5	61	6	12	5020	291	108	183	-	-	-	-	-	-	-	-	-	-	-
6	5	61		*	15770	264	91	173	5	26	19	2	1	16	0	7	14	2	18
7	3	61	7	11	5460	251	71	180	-	-	-	-	-	-	-	-	-	-	-
8	7	61	8	14	4960	237	81	156	-	-	-	-	-	-	-	-	-	-	-
9	7	61	9	15	5190	207	44	163	-	-	-	-	-	-	-	-	-	-	-
9	7	61		*	15610	231	65	166	4	16	16	2	1	12	1	7	7	1	14

127

NATIONAL WATER QUALITY NETWORK

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL ANALYSES

STATE TEXAS

MAJOR BASIN SOUTHWEST-LOWER MISSISSIPPI RIVER

MINOR BASIN LOWER RED RIVER BELOW DENISON

STATION LOCATION RED RIVER AT
DENISON, TEXAS

44

DATE OF SAMPLE			TEMP. (Degrees Centigrade)	DISSOLVED OXYGEN mg/l	pH	B.O.D. mg/l	C.O.D. mg/l	CHLORINE DEMAND		AMMONIA-NITROGEN mg/l	CHLORIDES mg/l	ALKALINITY mg/l	HARDNESS mg/l	COLOR (scale units)	TURBIDITY (scale units)	SULFATES mg/l	PHOSPHATES mg/l	TOTAL DISSOLVED SOLIDS mg/l	COLIFORMS per 100 ml.
MONTH	DAY	YEAR						1-HOUR mg/l	24-HOUR mg/l										
10	5	60	24.4	-	7.6	-	-	-	-	-	-	116	420	-	5	-	-	-	-
10	10	60	-	-	-	-	-	-	-	-	399	-	-	5	-	300	.0	1230	-
10	17	60	-	-	-	-	-	-	-	-	405	-	-	5	-	300	.0	1230	-
10	19	60	23.3	-	7.6	-	-	-	-	-	-	110	420	-	5	-	-	-	-
10	24	60	-	-	-	-	-	-	-	-	396	-	-	5	-	375	.0	1190	-
10	26	60	21.7	-	7.8	-	-	-	-	-	-	104	470	-	10	-	-	-	-
10	31	60	-	-	-	-	-	-	-	-	427	-	-	5	-	325	.0	1240	-
11	7	60	-	-	-	-	-	-	-	-	429	-	-	10	-	305	.0	1240	-
11	9	60	17.8	-	7.6	-	-	-	-	-	-	102	440	-	5	-	-	-	-
11	14	60	-	-	-	-	-	-	-	-	416	-	-	10	-	255	.0	1330	-
11	16	60	16.7	-	7.6	-	-	-	-	-	-	98	460	-	10	-	-	-	-
11	21	60	16.7	-	7.6	-	-	-	-	-	417	98	460	5	10	300	.0	1210	-
11	28	60	-	-	-	-	-	-	-	-	417	-	-	10	5	305	.1	1230	-
12	5	60	-	-	-	-	-	-	-	-	419	-	-	5	-	300	.0	1210	-
12	12	60	-	-	-	-	-	-	-	-	424	-	-	0	-	315	.0	1230	-
12	14	60	11.7	-	7.6	-	-	-	-	-	-	100	440	-	5	-	-	-	-
12	19	60	-	-	-	-	-	-	-	-	-	-	-	0	-	300	.0	1200	-
12	27	60	-	-	-	-	-	-	-	-	414	-	-	0	-	315	.0	1220	-
1	3	61	-	-	-	-	-	-	-	-	402	-	-	-	-	280	.0	1210	-
1	4	61	8.9	-	7.6	-	-	-	-	-	-	102	-	-	-	-	-	-	-
1	9	61	-	-	-	-	-	-	-	-	434	-	-	-	-	295	.0	-	-
1	16	61	-	-	-	-	-	-	-	-	441	-	-	0	-	270	.0	1290	-
1	23	61	-	-	-	-	-	-	-	-	405	-	-	0	-	290	.0	-	-
1	25	61	7.2	-	7.6	-	-	-	-	-	-	108	430	-	5	-	-	-	*3
1	30	61	-	-	-	-	-	-	-	-	387	-	-	0	-	290	.0	1200	-
2	1	61	6.7	-	7.8	-	-	-	-	-	-	112	400	-	5	-	-	-	3
2	6	61	-	-	-	-	-	-	-	-	385	-	-	0	-	283	.0	1218	-
2	8	61	6.7	-	7.8	-	-	-	-	-	-	108	410	-	5	-	-	-	*3
2	20	61	-	-	-	-	-	-	-	-	412	-	-	0	-	310	.0	1271	-
3	1	61	8.3	-	7.8	-	-	-	-	-	-	114	420	-	5	-	-	-	*3
3	7	61	9.4	-	8.0	-	-	-	-	-	-	116	430	-	5	-	-	-	*3
3	15	61	11.1	-	8.2	-	-	-	-	-	-	116	420	-	5	-	-	-	*33
3	20	61	-	-	-	-	-	-	-	-	-	405	-	0	-	290	.0	1218	-
3	21	61	11.7	-	8.0	-	-	-	-	-	-	116	430	-	5	-	-	-	3
3	27	61	-	-	-	-	-	-	-	-	410	-	-	0	-	300	.0	1244	-
3	28	61	12.2	-	8.0	-	-	-	-	-	-	116	440	-	5	-	-	-	3

NATIONAL WATER QUALITY NETWORK

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL ANALYSES

STATE TEXAS

MAJOR BASIN SOUTHWEST-LOWER MISSISSIPPI RIVER

MINOR BASIN LOWER RED RIVER BELOW DENISON

STATION LOCATION RED RIVER AT DENISON, TEXAS

44

DATE OF SAMPLE			TEMP. (Degrees Centigrade)	DISSOLVED OXYGEN mg/l	pH	B.O.D. mg/l	C.O.D. mg/l	CHLORINE DEMAND		AMMONIA-NITROGEN mg/l	CHLORIDES mg/l	ALKALINITY mg/l	HARDNESS mg/l	COLOR (scale units)	TURBIDITY (scale units)	SULFATES mg/l	PHOSPHATES mg/l	TOTAL DISSOLVED SOLIDS mg/l	COLIFORMS per 100 ml.
MONTH	DAY	YEAR						1-HOUR mg/l	24-HOUR mg/l										
4	3	61	-	-	-	-	-	-	-	-	435	-	-	5	-	305	.0	1244	-
4	4	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33
4	5	61	12.8	-	8.0	-	-	-	-	-	-	116	450	-	5	-	-	-	-
4	12	61	12.8	-	8.0	-	-	-	-	-	-	118	440	-	5	-	-	-	-
4	18	61	-	-	-	-	-	-	-	-	-	-	-	5	-	305	.2	1269	*30
4	19	61	13.9	-	8.0	-	-	-	-	-	-	126	450	-	0	-	-	-	-
4	24	61	-	-	-	-	-	-	-	-	470	-	-	5	-	300	.0	1266	-
4	26	61	15.0	-	8.0	-	-	-	-	-	-	122	470	-	0	-	-	-	10
5	1	61	-	-	-	-	-	-	-	-	450	-	-	7	-	285	.0	1422	-
5	3	61	16.1	-	8.0	-	-	-	-	-	-	124	460	-	0	-	-	-	*3
5	8	61	-	-	-	-	-	-	-	-	454	122	488	7	-	315	.0	1336	-
5	10	61	-	-	-	-	-	-	-	-	445	-	-	7	-	305	.1	1268	-
5	15	61	-	-	-	-	-	-	-	-	438	-	-	8	-	300	.0	1276	-
5	16	61	18.9	-	8.0	-	-	-	-	-	-	122	460	-	0	-	-	-	33
5	22	61	19.4	-	8.2	-	-	-	-	-	-	128	470	-	0	-	-	-	31
6	5	61	-	-	-	-	-	-	-	-	441	-	-	10	-	325	.0	1346	-
6	6	61	19.4	-	7.8	-	-	-	-	-	-	114	460	-	0	-	-	-	-
6	12	61	-	-	-	-	-	-	-	-	430	-	-	5	-	313	.0	1348	-
6	14	61	21.1	-	7.6	-	-	-	-	-	-	122	450	-	0	-	-	-	100
6	19	61	-	-	-	-	-	-	-	-	430	-	-	0	-	300	.0	1311	-
6	21	61	21.7	-	7.8	-	-	-	-	-	-	120	440	-	0	-	-	-	-
6	26	61	-	-	-	-	-	-	-	-	434	-	-	5	-	350	.0	1311	-
6	29	61	25.6	-	7.6	-	-	-	-	-	-	122	490	-	0	-	-	-	-
7	10	61	-	-	-	-	-	-	-	-	449	-	-	5	-	325	.0	1308	-
7	12	61	20.6	-	7.6	-	-	-	-	-	-	118	460	-	0	-	-	-	36
7	17	61	-	-	-	-	-	-	-	-	452	-	-	5	-	300	.0	1316	-
7	24	61	-	-	-	-	-	-	-	-	447	-	-	5	-	300	.0	1317	-
7	25	61	23.3	-	7.6	-	-	-	-	-	-	120	490	-	0	-	-	-	-
7	31	61	-	-	-	-	-	-	-	-	450	-	-	5	-	310	.0	1297	-
8	1	61	22.7	-	7.8	-	-	-	-	-	-	122	450	-	0	-	-	-	3
8	7	61	-	-	-	-	-	-	-	-	450	-	-	5	-	315	.1	1337	-
8	8	61	21.6	-	7.6	-	-	-	-	-	-	118	500	-	0	-	-	-	*3
8	14	61	-	-	-	-	-	-	-	-	450		-	5	-	285	.1	1345	-
8	15	61	22.2	-	7.4	-	-	-	-	-	-	130	570	-	0	-	-	-	-
8	21	61	-	-	-	-	-	-	-	-	455	120	468	5	0	275	.1	1347	-
8	22	61	23.3	-	7.4	-	-	-	-	-	-	126	470	-	0	-	-	-	10

NATIONAL WATER QUALITY NETWORK

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL ANALYSES

STATE	TEXAS
MAJOR BASIN	SOUTHWEST-LOWER MISSISSIPPI RIVER
MINOR BASIN	LOWER RED RIVER BELOW DENISON
STATION LOCATION	RED RIVER AT DENISON, TEXAS

44

DATE OF SAMPLE			TEMP. (Degrees Centigrade)	DISSOLVED OXYGEN mg/l	pH	B.O.D. mg/l	C.O.D. mg/l	CHLORINE DEMAND		AMMONIA-NITROGEN mg/l	CHLORIDES mg/l	ALKALINITY mg/l	HARDNESS mg/l	COLOR (scale units)	TURBIDITY (scale units)	SULFATES mg/l	PHOSPHATES mg/l	TOTAL DISSOLVED SOLIDS mg/l	COLIFORMS per 100 ml.
MONTH	DAY	YEAR						1-HOUR mg/l	24-HOUR mg/l										
8	28	61	-	-	-	-	-	-	-	-	455	-	-	5	-	315	.1	1355	7
8	29	61	23.3	-	7.4	-	-	-	-	-	-	128	540	-	5	-	-	-	-
9	5	61	22.2	-	7.4	-	-	-	-	-	435	134	530	5	5	315	.1	1317	-
9	7	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*3
9	11	61	23.3	-	7.4	-	-	-	-	-	-	126	540	-	0	-	-	-	-
9	12	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*3
9	18	61	-	-	-	-	-	-	-	-	460	-	-	5	-	325	.0	1349	7
9	25	61	22.2	-	7.8	-	-	-	-	-	-	110	490	-	5	-	-	-	-
9	26	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33

WATER QUALITY BASIC DATA

RADIOACTIVITY DETERMINATIONS

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN SABINE RIVER
STATION LOCATION SABINE RIVER NEAR
RULIFF, TEXAS

73

DATE SAMPLE TAKEN			RADIOACTIVITY IN WATER									RADIOACTIVITY IN PLANKTON (dry)					RADIOACTIVITY IN WATER		
			DATE OF DETERMINATION		ALPHA			BETA				DATE OF DETERMINATION		GROSS ACTIVITY			GROSS ACTIVITY		
					SUSPENDED	DISSOLVED	TOTAL	SUSPENDED	DISSOLVED	TOTAL				ALPHA	BETA		SUSPENDED	DISSOLVED	TOTAL
MO.	DAY	YEAR	MONTH	DAY	µµc/l	µµc/l	µµc/l	µµc/l	µµc/l	µµc/l		MO.	DAY	µµc/g	µµc/g		µµc/l	µµc/l	µµc/l
10	3	60	10	20	1	2	3	0	1	1									
10	10	60	10	21	2	1	3	0	1	1									
10	17	60	11	1	0	0	0	9	8	17									
10	24	60	11	15	0	3	3	0	1	1									
10	31	60	11	21	2	1	3	1	0	1									
11	7	60	11	29	1	0	1	2	0	2									
11	14	60	11	30	0	0	0	0	0	0									
11	29	60	12	20	1	1	2	0	2	2									
12	5	60	1	3	0	0	0	0	3	3									
12	12	60	1	6	1	1	2	0	0	0									
12	19	60	1	13	1	0	1	0	9	9									
12	27	60	1	19	0	0	0	0	0	0									
1	2	61	1	31	0	0	0	0	0	0									
1	9	61	1	27	0	1	1	0	0	0									
1	16	61	2	6	0	1	1	0	3	3									
1	23	61	2	17	0	1	1	0	1	1									
1	29	61	2	13	3	0	3	24	5	29									
2	6	61	2	21	4	0	4	0	0	0									
2	13	61	3	3	0	0	0	11	0	11									
2	19	61	3	9	1	0	1	0	5	5									
2	27	61	3	21	1	0	1	0	0	0									
3	6	61	3	27	1	0	1	0	0	0									
3	13	61	3	31	1	0	1	2	0	2									
3	20	61	4	5	0	0	0	0	5	5									
3	27	61	4	17	0	0	0	0	4	4									
4	3	61	5	5	2	1	3	0	5	5									
4	10	61	5	2	1	0	1	0	1	1									
4	17	61	5	17	0	0	0	2	8	10									
4	24	61	5	23	0	0	0	0	0	0									
5	1	61	6	8	0	0	0	0	0	0									
5	8	61	6	8	2	0	2	6	1	7									
5	15	61	6	2	1	1	2	0	0	0									
5	22	61	6	14	2	1	3	0	7	7									
5	29	61	6	20	1	1	2	0	0	0									
6	5	61	6	28	1	0	1	0	0	0									
6	11	61	7	6	1	0	1	0	0	0									
6	19	61	7	28	5	0	5	5	0	5									
7	31	61*	8	30	1	1	2	3	7	10									

WATER QUALITY BASIC DATA

RADIOACTIVITY DETERMINATIONS

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN SABINE RIVER
STATION LOCATION SABINE RIVER NEAR
RULIFF, TEXAS

73

DATE SAMPLE TAKEN			RADIOACTIVITY IN WATER									RADIOACTIVITY IN PLANKTON (dry)				RADIOACTIVITY IN WATER		
			DATE OF DETERMINATION		ALPHA			BETA				DATE OF DETERMINATION		GROSS ACTIVITY		GROSS ACTIVITY		
					SUSPENDED	DISSOLVED	TOTAL	SUSPENDED	DISSOLVED	TOTAL				ALPHA	BETA	SUSPENDED	DISSOLVED	TOTAL
MO.	DAY	YEAR	MONTH	DAY	µµc/l	µµc/l	µµc/l	µµc/l	µµc/l	µµc/l		MO.	DAY	µµc/g	µµc/g	µµc/l	µµc/l	µµc/l
8	30	61*	9	18	0	0	0	1	5	6								
9	6	61	10	3	-	-	-	0	0	0								
9	11	61	10	23	-	-	-	1	3	4								
9	18	61	10	11	-	-	-	1	4	5								
9	25	61	10	9	0	0	0	2	10	12								

WATER QUALITY BASIC DATA

PLANKTON POPULATION

NUMBER PER MILLILITER, EXCEPT MACROPLANKTON

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN SABINE RIVER
STATION LOCATION SABINE RIVER NEAR
RULIFF, TEXAS

73

DATE OF SAMPLE			ALGAE (Number per ml.)									INERT DIATOM SHELLS (No. per ml.)		DIATOMS DOMINANT SPECIES AND PERCENTAGES (See Introduction for Code Identification*)									OTHER MICROPLANKTON, FUNGI AND SHEATHED BACTERIA (No. per ml.)	MICROINVERTEBRATES					DOMINANT GENERA (See Introduction for Identification)
			TOTAL	BLUE-GREEN		GREEN		FLAGELLATES (Pigmented)		DIATOMS														PROTOZOA (No. per ml.)	ROTIFERS (No. per liter)	CRUSTACEA (No. per liter)	NEMATODES (No. per liter)	OTHER ANIMAL FORMS (No. per liter)	
MONTH	DAY	YEAR		COCCOID	FILAMENTOUS	COCCOID	FILAMENTOUS	GREEN	OTHER	CENTRIC	PENNATE	CENTRIC	PENNATE	FIRST*	PERCENTAGE	SECOND*	PERCENTAGE	THIRD*	PERCENTAGE	FOURTH*	PERCENTAGE	OTHER PERCENTAGE							
10	4	60	200			20			20	110	50	150	70	26	40	70	10	53	10	10	*	40	70	20	20			1	-----
11	7	60	200							220		20		26	60	65	*	57	*	53	20	40	70		8				4----
12	5	60	100					50		20			50										50		2		8	2	-----
12	29	60								20			20										270	10					-----
1	3	61										20											90						-----
2	5	61								20	20												90		171	999			-----
3	6	61	100								70	20														4			-----
3	20	61	300	20				160	20		70		20										20		10	4			-----
4	3	61	300				20	160		90	20	20	20	43	30	26	20	92	10	44	10	50	20		8	8	2	5	-----
4	17	61	400			140		170		100				57	30	43	10	82	10	26	10	50	20		29	21			-----
5	1	61	4200	290		480		1370	60	1660	390	250	60	57	50	26	20	82	10	84	10	10			12				41937
5	15	61	2400	50		90		690	50	1230	310	1230	180	57	70	26	10	82	10	23	*	10		10	2				41--7
6	5	61	300			110		60		40	60	150	40	57	30	26	10	43	10	68	10	50			6	2	1		-----
6	19	61	100							20	50	50	250	43	40	92	10	10	10	88	10	40							-----
7	3	61	100					20		50			90	26	30	57	10	82	10	56	10	50							-----
7	19	61	100						120	20		20	20	92	20	26	10	70	10	71	*	60			11	2			-----
8	7	61		50								20																	-----
8	21	61	100			20				20	20	50	50	26	30	71	10	68	10	57	*	50	20						-----
9	6	61	400			60		60		80	170	40	60																-----
9	18	61	200			20		20		80	100		20										20		6	1			-----

NATIONAL WATER QUALITY NETWORK

ORGANIC CHEMICALS

RECOVERED BY CARBON FILTER TECHNIQUE

RESULTS IN MICROGRAMS PER LITER
(Parts per billion)

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN SABINE RIVER
STATION LOCATION SABINE RIVER NEAR
RULIFF, TEXAS

73

DATE OF SAMPLE					GALLONS FILTERED	EXTRACTABLES			CHLOROFORM EXTRACTABLES										
BEGINNING			END								NEUTRALS								
MONTH	DAY	YEAR	MONTH	DAY		TOTAL	CHLORO-FORM	ALCOHOL	ETHER INSOLUBLES	WATER SOLUBLES	TOTAL	ALIPHATICS	AROMATICS	OXYGEN-ATED COMPOUNDS	LOSS	WEAK ACIDS	STRONG ACIDS	BASES	LOSS
10	5	60	10	22	5000	369	121	248	1	27	34	2	1	29	2	17	18	2	22
11	8	60	11	24	5000	349	100	249	2	21	24	2	2	17	3	12	15	2	24
12	14	60	12	27	5000	378	142	236	9	38	21	1	2	18	0	13	18	3	40
1	17	61	1	29	5000	304	104	200	5	24	20	1	1	17	1	9	11	1	34
2	15	61	2	24	5050	330	165	165	6	36	45	10	6	29	0	20	18	2	38
3	14	61	3	27	5000	407	101	306	1	21	30	3	3	21	3	14	11	1	23
4	8	61	4	20	5070	341	142	199	6	34	27	2	2	22	1	14	20	1	40
5	12	61	5	30	5000	181	82	99	3	19	20	2	2	15	1	10	10	1	19
6	22	61	7	17	3200	372	206	166	6	47	54	15	8	30	1	21	33	2	43
9	1	61	9	23	5000	260	77	183	2	14	25	4	2	18	1	12	9	1	14

NATIONAL WATER QUALITY NETWORK

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL ANALYSES

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN SABINE RIVER
STATION LOCATION SABINE RIVER NEAR
RULIFF, TEXAS

DATE OF SAMPLE			TEMP. (Degrees Centigrade)	DISSOLVED OXYGEN mg/l	pH	B.O.D. mg/l	C.O.D. mg/l	CHLORINE DEMAND		AMMONIA-NITROGEN mg/l	CHLORIDES mg/l	ALKALINITY mg/l	HARDNESS mg/l	COLOR (scale units)	TURBIDITY (scale units)	SULFATES mg/l	PHOSPHATES mg/l	TOTAL DISSOLVED SOLIDS mg/l	COLIFORMS per 100 ml.
MONTH	DAY	YEAR						1-HOUR mg/l	24-HOUR mg/l										
10	3	60	-	-	7.2	-	-	-	-	-	38	42	72	15	5	12	.1	121	-
10	24	60	-	-	7.2	-	-	-	-	-	49	26	44	100	27	15	.2	157	-
10	31	60	-	-	7.3	-	-	-	-	-	37	32	72	100	5	12	.2	120	-
11	7	60	-	-	7.2	-	-	-	-	-	30	24	56	-	50	12	-	105	-
11	29	60	-	-	7.4	-	-	-	-	-	36	36	80	-	30	27	.0	169	-
12	5	60	-	-	7.9	-	-	-	-	-	32	20	50	160	110	15	.0	98	-
12	19	60	-	-	7.5	-	-	-	-	-	18	14	36	140	20	16	.0	-	-
12	27	60	-	-	7.7	-	-	-	-	-	23	16	38	50	20	19	.0	72	-
1	2	61	-	-	7.5	-	-	-	-	-	22	14	28	100	0	13	.0	55	-
1	16	61	-	-	7.4	-	-	-	-	-	10	16	24	50	0	11	.0	-	-
1	23	61	-	-	7.6	-	-	-	-	-	10	10	30	80	26	24	.0	77	-
1	29	61	-	-	7.3	-	-	-	-	-	19	14	44	50	110	40	.0	114	-
2	6	61	-	-	6.8	-	-	-	-	-	20	12	32	40	500	16	.0	48	-
2	13	61	-	-	7.3	-	-	-	-	-	14	32	52	40	75	30	.0	104	-
2	19	61	-	-	-	-	-	-	-	-	6	-	-	-	-	10	.0	90	-
2	27	61	-	-	7.6	-	-	-	-	-	-	-	-	80	-	8	.0	-	-
3	13	61	-	-	6.8	-	-	-	-	-	17	-	-	35	-	10	.0	89	-
3	27	61	-	-	7.0	-	-	-	-	-	6	18	44	50	-	16	-	-	-
4	10	61	-	-	-	-	-	-	-	-	-	-	48	-	-	-	-	-	-
4	24	61	-	-	6.8	-	-	-	-	-	27	26	68	65	-	20	-	-	-
5	1	61	-	-	7.7	-	-	-	-	-	33	32	76	40	-	22	-	-	-
5	11	61	-	-	7.7	-	-	-	-	-	-	-	-	25	-	21	.1	-	-
5	22	61	-	-	7.3	-	-	-	-	-	-	-	-	10	-	20	.1	-	-
5	29	61	-	-	7.4	-	-	-	-	-	-	-	56	20	-	16	.1	-	-
6	5	61	-	-	7.2	-	-	-	-	-	-	-	-	10	-	9	-	-	-
6	11	61	-	-	7.2	-	-	-	-	-	76	36	76	10	-	26	-	-	-
6	19	61	-	-	7.3	-	-	-	-	-	70	44	104	10	240	85	-	-	-
7	10	61	-	-	7.7	-	-	-	-	-	31	26	60	35	35	19	.0	102	-
7	24	61	-	-	7.5	-	-	-	-	-	32	22	60	35	0	16	.1	109	-
8	14	61	-	-	7.2	-	-	-	-	-	35	24	40	30	0	14	.0	112	-
8	21	61	-	-	7.8	-	-	-	-	-	38	26	48	35	0	28	.1	147	-
8	30	61	-	-	7.1	-	-	-	-	-	30	26	72	30	28	9	.0	112	-
9	6	61	-	-	-	-	-	-	-	-	40	32	48	25	0	18	-	-	-
9	18	61	-	-	6.8	-	-	-	-	-	13	10	24	50	0	8	-	-	-
9	25	61	-	-	7.2	-	-	-	-	-	17	20	28	100	0	17	-	86	-

WATER QUALITY BASIC DATA

RADIOACTIVITY DETERMINATIONS

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN RIO GRANDE /UPPER/ ABOVE PECOS RIVER
STATION LOCATION RIO GRANDE AT
EL PASO, TEXAS 46

DATE SAMPLE TAKEN			RADIOACTIVITY IN WATER								RADIOACTIVITY IN PLANKTON (dry)				RADIOACTIVITY IN WATER		
			DATE OF DETERMINATION		ALPHA			BETA			DATE OF DETERMINATION		GROSS ACTIVITY		GROSS ACTIVITY		
					SUSPENDED	DISSOLVED	TOTAL	SUSPENDED	DISSOLVED	TOTAL			ALPHA	BETA	SUSPENDED	DISSOLVED	TOTAL
MO.	DAY	YEAR	MONTH	DAY	μμc/l	μμc/l	μμc/l	μμc/l	μμc/l	μμc/l	MO.	DAY	μμc/g	μμc/g	μμc/l	μμc/l	μμc/l
10	24	60	11	10	0	15	15	0	0	0							
10	31	60	12	19	0	12	12	0	5	5							
12	27	60	1	25	-	-	-	0	0	0							
1	3	61	2	20	-	-	-	0	0	0							
1	16	61	3	2	1	0	1	0	0	0							
2	6	61	2	23	1	1	2	0	0	0							
2	20	61	3	23	0	0	0	0	0	0							
3	6	61	4	4	-	-	-	0	0	0							
3	27	61*	4	10	8	5	13	0	0	0							
4	3	61	5	11	-	-	-	0	18	18							
4	28	61*	5	15	0	4	4	0	0	0							
5	8	61*	5	24	0	2	2	0	0	0							
5	29	61*	6	9	0	4	4	0	1	1							
6	12	61*	6	28	-	-	-	0	0	0							
6	26	61*	7	25	1	12	13	0	1	1							
7	10	61*	8	3	-	-	-	0	0	0							
7	31	61*	8	31	2	2	4	13	28	41							
8	14	61*	9	12	6	5	11	4	10	14							
8	28	61*	9	21	11	5	16	20	7	27							
9	18	61	10	13	-	-	-	5	5	10							

WATER QUALITY BASIC DATA

PLANKTON POPULATION

NUMBER PER MILLILITER, EXCEPT MACROPLANKTON

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN RIO GRANDE /UPPER/ ABOVE PECOS RIVER
STATION LOCATION RIO GRANDE AT
EL PASO, TEXAS
46

DATE OF SAMPLE			ALGAE (Number per ml.)									INERT DIATOM SHELLS (No. per ml.)		DIATOMS DOMINANT SPECIES AND PERCENTAGES (See Introduction for Code Identification*)									OTHER MICROPLANKTON, FUNGI AND SHEATHED BACTERIA (No. per ml.)	MICROINVERTEBRATES					DOMINANT GENERA (See Introduction for Identification)
				BLUE-GREEN		GREEN		FLAGELLATES (Pigmented)		DIATOMS																			
MONTH	DAY	YEAR	TOTAL	COCCOID	FILAMENTOUS	COCCOID	FILAMENTOUS	GREEN	OTHER	CENTRIC	PENNATE	CENTRIC	PENNATE	FIRST*	PER-CENTAGE	SECOND*	PER-CENTAGE	THIRD*	PER-CENTAGE	FOURTH*	PER-CENTAGE	OTHER PER-CENTAGE		PROTOZOA (No. per ml.)	ROTIFIERS (No. per liter)	CRUSTACEA (No. per liter)	NEMATODES (No. per liter)	OTHER ANIMAL FORMS (No. per liter)	
1	3	61	1500					360		20	1070		1010	26	10	4	10	5	10	11	*	60	20						---63
2	6	61	2200					1010		20	1140		960	12	40	65	10	4	10	45	*	30			5		6		8-763
3	6	61	3500			1610		360		360	1160	50	1560	4	20	12	10	65	10	51	*	50	50				4		84723
4	3	61	8600			6730		70		380	1470	40	1510	12	10	65	10	70	10	66	10	70	40						4-763
5	1	61	2400	20		210				580	1570	120	970	12	20	51	10	92	*	36	*	70							34763
6	2	61	4000			390		120		770	2690	120	1370	15	20	12	10	65	10	51	10	60							45763
7	3	61	4200			280		1510		540	1880		930	15	50	12	10	41	*	10	*	40							-1963
8	7	61	3400		40	170		1040	500	1390	270	20												10	16	4	1		4193-
8	21	61	100					70		20	50			26	30	70	20	67	10	65	10	40	20				1	1	-----
9	18	61	300			20		80		20	210	20	80	12	50	92	10	15	*	71	*	40							-----

NATIONAL WATER QUALITY NETWORK

ORGANIC CHEMICALS

RECOVERED BY CARBON FILTER TECHNIQUE

RESULTS IN MICROGRAMS PER LITER
(Parts per billion)

STATE TEXAS

MAJOR BASIN WESTERN GULF

MINOR BASIN RIO GRANDE /UPPER/ ABOVE PECOS RIVER

STATION LOCATION RIO GRANDE AT
EL PASO, TEXAS

46

DATE OF SAMPLE					GALLONS FILTERED	EXTRACTABLES			CHLOROFORM EXTRACTABLES										
BEGINNING			END								NEUTRALS								
MONTH	DAY	YEAR	MONTH	DAY		TOTAL	CHLORO-FORM	ALCOHOL	ETHER INSOLUBLES	WATER SOLUBLES	TOTAL	ALIPHATICS	AROMATICS	OXYGEN-ATED COMPOUNDS	LOSS	WEAK ACIDS	STRONG ACIDS	BASES	LOSS
4	4	61	4	9	5190	168	48	120	-	-	-	-	-	-	-	-	-	-	-
5	3	61	5	8	5227	161	41	120	-	-	-	-	-	-	-	-	-	-	-
6	5	61	6	10	4875	119	30	89	-	-	-	-	-	-	-	-	-	-	-
6	5	61		*	15292	150	40	110	4	10	14	2	1	11	0	4	3	1	4
7	3	61	7	8	5010	119	40	79	-	-	-	-	-	-	-	-	-	-	-
8	7	61	8	14	5865	113	32	81	-	-	-	-	-	-	-	-	-	-	-
9	5	61	9	14	4867	109	21	88	-	-	-	-	-	-	-	-	-	-	-
9	5	61		*	15742	114	31	83	1	8	9	1	1	6	1	3	2	0	8

NATIONAL WATER QUALITY NETWORK

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL ANALYSES

STATE TEXAS

MAJOR BASIN WESTERN GULF

MINOR BASIN RIO GRANDE /UPPER/ ABOVE PECOS RIVER

STATION LOCATION RIO GRANDE AT

EL PASO, TEXAS 46

DATE OF SAMPLE			TEMP. (Degrees Centigrade)	DISSOLVED OXYGEN mg/l	pH	B.O.D. mg/l	C.O.D. mg/l	CHLORINE DEMAND		AMMONIA-NITROGEN mg/l	CHLORIDES mg/l	ALKALINITY mg/l	HARDNESS mg/l	COLOR (scale units)	TURBIDITY (scale units)	SULFATES mg/l	PHOSPHATES mg/l	TOTAL DISSOLVED SOLIDS mg/l	COLIFORMS per 100 ml.
MONTH	DAY	YEAR						1-HOUR mg/l	24-HOUR mg/l										
3	20	61	20.0	9.0	8.1	1.3	-	1.2	1.6	-	125	154	268	-	220	217	-	751	-
3	27	61	15.0	8.4	8.2	1.7	-	1.4	1.6	-	105	169	270	-	195	226	-	720	250
4	17	61	20.5	8.7	8.2	2.1	-	1.5	1.6	-	135	186	300	-	90	268	-	936	-
4	24	61	27.0	8.6	8.2	1.8	-	1.2	1.8	-	135	192	332	-	105	290	-	820	-
5	5	61	22.5	8.3	8.3	2.9	-	1.4	1.6	-	155	196	332	-	110	310	-	900	-
5	8	61	23.0	8.5	8.2	3.2	-	1.4	1.7	-	210	202	318	-	110	338	-	1000	-
5	15	61	31.5	8.9	8.2	3.5	-	1.4	1.8	-	200	185	308	-	120	321	-	992	-
5	22	61	23.0	8.6	8.2	3.5	-	1.6	1.9	-	212	194	300	-	100	274	-	881	-
5	29	61	26.0	8.4	8.2	3.2	-	2.1	2.3	-	211	186	296	-	110	281	-	832	-
6	5	61	26.5	8.8	8.2	3.9	-	1.9	2.0	-	145	174	292	-	160	268	-	619	-
6	19	61	26.5	8.7	8.2	4.2	-	1.2	1.6	-	215	174	282	-	180	288	-	826	-
6	26	61	27.0	9.2	8.4	3.9	-	1.4	1.6	-	155	187	315	-	180	318	-	962	-
7	5	61	-	-	8.3	-	-	1.2	1.4	-	140	172	284	-	210	269	.0	962	-
7	11	61	28.0	11.4	8.3	5.7	-	1.6	2.0	-	110	156	254	-	3000	251	-	731	-
7	17	61	28.0	8.8	8.3	4.5	-	1.1	1.4	-	190	195	324	-	450	308	-	924	-
7	25	61	27.0	10.1	8.4	5.0	-	1.4	1.7	-	140	185	290	-	-	266	-	792	-
8	1	61	30.5	9.8	8.2	5.9	-	1.8	1.9	-	125	170	272	-	180	125	-	756	-
8	8	61	31.0	9.4	8.3	5.8	-	1.8	2.4	-	150	189	288	-	180	261	-	748	-
8	15	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	670
8	16	61	30.0	9.2	8.2	5.5	-	1.4	1.6	-	105	176	258	-	2500	230	.0	725	-
8	23	61	31.0	9.8	8.2	6.0	-	1.5	1.7	-	165	202	344	-	800	300	-	996	-

WATER QUALITY BASIC DATA

RADIOACTIVITY DETERMINATIONS

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN RIO GRANDE /LOWER/ BELOW PECOS RIVER
STATION LOCATION RIO GRANDE AT
LAREDO, TEXAS 45

DATE SAMPLE TAKEN			RADIOACTIVITY IN WATER										RADIOACTIVITY IN PLANKTON (dry)					RADIOACTIVITY IN WATER		
			DATE OF DETERMINATION		ALPHA			BETA				DATE OF DETERMINATION		GROSS ACTIVITY			GROSS ACTIVITY		
					SUSPENDED	DISSOLVED	TOTAL	SUSPENDED	DISSOLVED	TOTAL				ALPHA	BETA		SUSPENDED	DISSOLVED	TOTAL
MO.	DAY	YEAR	MONTH	DAY	μμc/l	μμc/l	μμc/l	μμc/l	μμc/l	μμc/l		MO.	DAY	μμc/g	μμc/g		μμc/l	μμc/l	μμc/l
10	25	60*	11	15	39	5	44	41	0	41									
11	29	60*	12	9	7	3	10	23	10	33									
12	6	60	1	19	9	5	14	0	5	5									
1	31	61*	2	10	0	2	2	0	0	0									
2	28	61*	3	13	1	1	2	0	0	0									
3	28	61*	4	11	0	2	2	0	0	0									
4	25	61*	5	8	1	6	7	0	0	0									
5	30	61*	6	13	1	3	4	0	0	0									
6	27	61*	7	13	23	3	26	14	0	14									
8	1	61*	8	29	42	4	46	124	14	138									
8	29	61*	9	14	27	3	30	20	0	20									
9	5	61	10	3	-	-	-	2	4	6									
9	12	61	10	2	-	-	-	14	0	14									
9	19	61	10	2	4	2	6	6	11	17									
9	26	61	10	10	6	3	9	22	5	27									

WATER QUALITY BASIC DATA

PLANKTON POPULATION

NUMBER PER MILLILITER, EXCEPT MACROPLANKTON

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN RIO GRANDE /LOWER/ BELOW PECOS RIVER
STATION LOCATION RIO GRANDE AT
LAREDO, TEXAS

45

DATE OF SAMPLE			ALGAE (Number per ml.)									INERT DIATOM SHELLS (No. per ml.)		DIATOMS DOMINANT SPECIES AND PERCENTAGES (See Introduction for Code Identification*)									OTHER MICROPLANKTON, FUNGI AND SHEATHED BACTERIA (No. per ml.)	MICROINVERTEBRATES					DOMINANT GENERA (See Introduction for Identification)
			TOTAL	BLUE-GREEN		GREEN		FLAGELLATES (Pigmented)		DIATOMS														PROTOZOA (No. per ml.)	ROTIFERS (No. per liter)	CRUSTACEA (No. per liter)	NEMATODES (No. per liter)	OTHER ANIMAL FORMS (No. per liter)	
MONTH	DAY	YEAR		COCCOID	FILA-MENT-OUS	COCCOID	FILA-MENT-OUS	GREEN	OTHER	CENTRIC	PENNATE	CENTRIC	PENNATE	FIRST*	PER-CENTAGE	SECOND*	PER-CENTAGE	THIRD*	PER-CENTAGE	FOURTH*	PER-CENTAGE	OTHER PER-CENTAGE							
10	5	60	1000			160		180		500	160		20	82	60	68	10	69	10	55	10	20						1	--9--
10	20	60	200					20		90	50	40	70	55	10	92	10	71	10	65	10	60	20						-----
11	8	60	400					20		200	180	90	20																--9--
11	22	60	1000			90		90	20	750	90	70	70	26	20	55	10	82	10	80	10	50							4-9--
12	1	60	4600			650		600		1970	1340	850	130	26	70	82	10	71	10	70	*	10		10					71963
12	20	60	6500			40		150		6180	130	200	400	80	60	82	30	26	10			10	70						--9--
12	29	60	3500			50		20		3240	200	760	270	80	90	71	*	26	*			10			2				--9--
1	12	61	4600			90		20		580	3950	290	340	47	70	80	10	26	10	71	*	10	50						---66
2	7	61	7200			130				940	6090	270	540	47	90	80	*	26	*			10	20						4-966
3	3	61	22600			70		20	50	490	21960		580	47	90								20						----6
3	30	61	43300	110		2180		220	330	760	39740	270	910	47	90	26	*	80	*			10		60	1				78726
4	12	61	28800			4040		160	20	530	24910	160	1110	47	90	26	*												4--16
4	27	61	4100			1840		80		290	1900	100	520	47	30	75	20	26	10	80	10	40							-8865
5	11	61	7500	20		3170		290	20	520	3480	100	750	47	70	26	10	80	*	75	*	20	40						48863
6	1	61	100							20	70		200																-----
6	14	61	700			40				60	580	20	60	69	30	47	20	92	10	71	10	30							---6-
6	30	61	100							60	80		150	69	60	55	10	92	*	13	*	20							-----
7	12	61	1300			490		290		180	340	50	200																---6-
8	7	61								20	20	20	80																-----
8	21	61	100					20		50			20	55	40	69	10	54	*	71	*	40							-----
9	5	61						20			20		40																-----
9	19	61	300			60		60		60	150		100																-----

141

NATIONAL WATER QUALITY NETWORK

ORGANIC CHEMICALS

RECOVERED BY CARBON FILTER TECHNIQUE

RESULTS IN MICROGRAMS PER LITER
(Parts per billion)

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN RIO GRANDE /LOWER/ BELOW PECOS RIVER
STATION LOCATION RIO GRANDE AT
LAREDO, TEXAS 45

DATE OF SAMPLE					GALLONS FILTERED	EXTRACTABLES			CHLOROFORM EXTRACTABLES										
BEGINNING			END								NEUTRALS								
MONTH	DAY	YEAR	MONTH	DAY		TOTAL	CHLORO-FORM	ALCOHOL	ETHER INSOLUBLES	WATER SOLUBLES	TOTAL	ALIPHATICS	AROMATICS	OXYGEN-ATED COMPOUNDS	LOSS	WEAK ACIDS	STRONG ACIDS	BASES	LOSS
10	8	60	10	14	3311	134	21	113	0	3	13	5	1	7	0	2	1	1	1
10	28	60	11	4	1661	174	17*	157	-	-	-	-	-	-	-	-	-	-	-
11	25	60	11	29	6557	62	12	50	0	1	9	4	1	4	0	1	0	0	1
12	14	60	12	20	3922	168	14	154	0	1	11	5	2	4	0	1	0	0	1
1	11	61	1	20	1470	250	34	216	1	6	16	5	2	9	0	4	1	1	5
2	8	61	2	16	3067	108	15	93	0	3	8	2	1	5	0	2	1	0	1
3	2	61	3	8	1752	122	14*	108	-	-	-	-	-	-	-	-	-	-	-
3	28	61	4	4	4591	105	16	89	1	3	6	1	1	4	0	2	1	0	3
4	19	61	4	26	3585	102	14	88	0	2	9	3	1	5	0	1	0	0	2
5	24	61	6	1	4857	106	33	73	1	8	13	3	1	8	1	3	2	1	5
6	27	61	7	6	1966	200	41	159	3	10	16	6	3	7	0	3	2	1	6
7	21	61	7	28	3775	106	25	81	1	7	10	4	1	5	0	2	1	0	4
8	16	61	8	23	4613	94	25	69	0	6	12	5	1	5	1	3	2	0	2
9	15	61	9	22	4698	70	21	49	1	3	14	8	2	4	0	1	1	0	1

*TOO LITTLE SAMPLE FOR SEPARATION

NATIONAL WATER QUALITY NETWORK

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL ANALYSES

STATE TEXAS

MAJOR BASIN WESTERN GULF

MINOR BASIN RIO GRANDE /LOWER/ BELOW PECOS RIVER

STATION LOCATION RIO GRANDE AT
LAREDO, TEXAS

45

DATE OF SAMPLE			TEMP. (Degrees Centigrade)	DISSOLVED OXYGEN mg/l	pH	B.O.D. mg/l	C.O.D. mg/l	CHLORINE DEMAND		AMMONIA-NITROGEN mg/l	CHLORIDES mg/l	ALKALINITY mg/l	HARDNESS mg/l	COLOR (scale units)	TURBIDITY (scale units)	SULFATES mg/l	PHOSPHATES mg/l	TOTAL DISSOLVED SOLIDS mg/l	COLIFORMS per 100 ml.
MONTH	DAY	YEAR						1-HOUR mg/l	24-HOUR mg/l										
10	4	60	26.0	-	8.3	-	-	-	-	-	78	129	240	-	308	160	-	-	230
10	11	60	26.2	-	8.2	-	-	-	-	-	78	120	226	-	110	164	-	-	150
10	18	60	24.0	-	8.0	-	-	-	-	-	15	66	100	-	4100	61	-	-	3000
10	25	60	23.0	-	8.2	-	-	-	-	-	44	115	175	-	2500	90	-	-	7800
11	1	60	21.0	-	8.2	-	-	-	-	-	36	102	157	-	5200	85	-	-	-
11	8	60	20.0	-	8.3	-	-	-	-	-	62	142	234	-	2760	150	-	-	6000
11	15	60	21.0	-	8.3	-	-	-	-	-	76	159	270	-	950	156	-	-	1300
11	22	60	18.5	-	8.2	-	-	-	-	-	102	133	266	-	525	176	-	-	2300
11	29	60	19.0	-	8.3	-	-	-	-	-	110	141	280	-	31	161	-	-	120
12	6	60	18.0	-	8.3	-	-	-	-	-	110	157	304	-	1390	219	-	-	4300
12	13	60	12.0	-	8.1	-	-	-	-	-	95	162	290	-	690	196	-	-	1800
12	20	60	14.0	-	8.2	-	-	-	-	-	95	140	268	-	244	171	-	-	790
12	27	60	13.0	-	8.2	-	-	-	-	-	100	148	280	-	420	173	-	-	7300
1	3	61	12.0	-	8.1	-	-	-	-	-	105	142	272	-	258	171	-	-	2900
1	10	61	12.0	-	8.2	-	-	-	-	-	105	144	274	-	143	165	-	-	770
1	17	61	13.0	-	8.2	-	-	-	-	-	105	150	280	-	69	168	-	-	20
1	24	61	14.0	-	8.2	-	-	-	-	-	110	148	284	-	116	179	-	-	700
1	31	61	11.0	-	8.2	-	-	-	-	-	110	150	280	-	120	165	-	-	-
2	7	61	10.0	-	8.2	-	-	-	-	-	110	140	280	-	200	140	-	-	400
2	14	61	16.0	-	8.3	-	-	-	-	-	110	140	270	-	170	135	-	-	110
2	21	61	16.2	-	8.3	-	-	-	-	-	120	118	256	-	172	148	-	-	550
2	28	61	15.0	-	8.3	-	-	-	-	-	120	131	270	-	232	148	-	-	630
3	7	61	23.0	-	8.3	-	-	-	-	-	120	117	254	-	141	148	-	-	330
3	14	61	22.2	-	8.3	-	-	-	-	-	125	114	254	-	158	169	-	-	100
3	21	61	19.0	-	8.3	-	-	-	-	-	120	107	248	-	210	168	-	-	66
3	28	61	24.0	-	8.3	-	-	-	-	-	125	100	242	-	186	171	-	-	400
4	4	61	21.0	-	8.3	-	-	-	-	-	125	121	264	-	110	148	-	-	66
4	10	61	21.5	-	8.3	-	-	-	-	-	135	121	276	-	268	158	-	-	-
4	11	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*100
4	18	61	21.0	-	8.3	-	-	-	-	-	175	121	298	-	90	160	-	-	90
4	25	61	26.0	-	8.3	-	-	-	-	-	190	120	306	-	71	171	-	-	-
4	26	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	480
5	2	61	25.5	-	8.0	-	-	-	-	-	105	96	210	-	1900	122	-	-	72000
5	9	61	26.0	-	8.3	-	-	-	-	-	145	130	280	-	190	132	-	-	110
5	16	61	28.0	-	8.3	-	-	-	-	-	150	112	280	-	76	173	-	-	300
5	23	61	28.1	-	8.3	-	-	-	-	-	130	123	258	-	63	135	-	-	400
5	30	61	27.0	-	8.3	-	-	-	-	-	100	137	266	-	760	187	-	-	-
6	2	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2300
6	6	61	27.5	-	8.3	-	-	-	-	-	62	128	240	-	1300	135	-	-	1800
6	13	61	28.5	-	8.3	-	-	-	-	-	86	140	260	-	1360	164	-	-	*300

NATIONAL WATER QUALITY NETWORK

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL ANALYSES

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN RIO GRANDE /LOWER/ BELOW PECOS RIVER
STATION LOCATION RIO GRANDE AT
LAREDO, TEXAS 45

DATE OF SAMPLE			TEMP. (Degrees Centigrade)	DISSOLVED OXYGEN mg/l	pH	B.O.D. mg/l	C.O.D. mg/l	CHLORINE DEMAND		AMMONIA-NITROGEN mg/l	CHLORIDES mg/l	ALKALINITY mg/l	HARDNESS mg/l	COLOR (scale units)	TURBIDITY (scale units)	SULFATES mg/l	PHOSPHATES mg/l	TOTAL DISSOLVED SOLIDS mg/l	COLIFORMS per 100 ml.
MONTH	DAY	YEAR						1-HOUR mg/l	24-HOUR mg/l										
6	20	61	26.0	-	8.1	-	-	-	-	-	18	91	117	-	3200	55	-	-	11000
6	27	61	28.5	-	8.3	-	-	-	-	-	60	149	236	-	2860	105	-	-	1800
7	5	61	29.0	-	8.3	-	-	-	-	-	85	154	266	-	970	127	-	-	-
7	11	61	29.0	-	8.3	-	-	-	-	-	90	143	258	-	535	135	-	-	650
7	18	61	29.0	-	8.2	-	-	-	-	-	85	135	250	-	460	123	-	-	350
7	25	61	27.5	-	8.2	-	-	-	-	-	62	121	212	-	5500	94	-	-	16000
8	1	61	27.1	-	8.1	-	-	-	-	-	48	110	280	-	1560	183	-	-	*1000
8	8	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	900
8	15	61	29.0	-	8.3	-	-	-	-	-	74	141	250	-	1340	135	-	-	670
8	22	61	29.0	-	8.3	-	-	-	-	-	66	140	234	-	1760	136	-	-	1300
8	29	61	28.5	-	8.3	-	-	-	-	-	50	134	218	-	4200	151	-	-	8700
9	5	61	28.0	-	8.3	-	-	-	-	-	72	133	260	-	1220	195	-	-	130
9	12	61	26.0	-	8.3	-	-	-	-	-	70	138	254	-	1560	226	-	-	260
9	19	61	25.0	-	8.3	-	-	-	-	-	76	143	254	-	820	199	-	-	50
9	26	61	28.2	-	8.4	-	-	-	-	-	78	136	240	-	1090	182	-	-	2000

WATER QUALITY BASIC DATA

RADIOACTIVITY DETERMINATIONS

STATE TEXAS

MAJOR BASIN WESTERN GULF

MINOR BASIN RIO GRANDE /LOWER/ BELOW PECOS RIVER

STATION LOCATION RIO GRANDE AT
BROWNSVILLE, TEXAS 71

DATE SAMPLE TAKEN			RADIOACTIVITY IN WATER										RADIOACTIVITY IN PLANKTON (dry)					RADIOACTIVITY IN WATER		
			DATE OF DETERMINATION		ALPHA			BETA				DATE OF DETERMINATION		GROSS ACTIVITY			GROSS ACTIVITY		
					SUSPENDED	DISSOLVED	TOTAL	SUSPENDED	DISSOLVED	TOTAL				ALPHA	BETA		SUSPENDED	DISSOLVED	TOTAL
MO	DAY	YEAR	MONTH	DAY	μμc/l	μμc/l	μμc/l	μμc/l	μμc/l	μμc/l		MO.	DAY	μμc/g	μμc/g		μμc/l	μμc/l	μμc/l
10	2	60*	10	14	2	4	6	0	0	0									
10	14	60*	10	24	-	-	-	0	0	0									
10	28	60*	11	17	17	4	21	0	0	0									
11	11	60*	11	25	-	-	-	4	0	4									
12	15	60*	11	5	12	9	21	9	4	13									
12	30	60*	1	16	0	2	2	0	0	0									
1	13	61	2	3	-	-	-	0	0	0									
1	27	61*	3	1	0	4	4	0	0	0									
2	17	61*	3	2	-	-	-	0	0	0									
2	24	61	3	22	0	1	1	18	7	25									
3	17	61*	4	4	-	-	-	0	0	0									
3	24	61	5	5	0	2	2	1	0	1									
4	7	61	5	19	5	4	9	0	0	0									
5	24	61*	6	27	1	4	5	0	0	0									
6	13	61*	7	10	0	4	4	6	0	6									
6	28	61*	7	31	3	3	6	0	0	0									
7	12	61*	8	10	-	-	-	0	0	0									
8	2	61*	8	30	1	4	5	0	22	22									
8	16	61*	9	18	-	-	-	10	27	37									
8	30	61*	9	21	2	5	7	13	15	28									
9	13	61	10	23	-	-	-	16	30	46									
9	20	61	10	9	-	-	-	2	11	13									
9	28	61	10	12	0	5	5	0	11	11									

WATER QUALITY BASIC DATA

PLANKTON POPULATION

NUMBER PER MILLILITER, EXCEPT MACROPLANKTON

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN RIO GRANDE /LOWER/ BELOW PECOS RIVER
STATION LOCATION RIO GRANDE AT
BROWNSVILLE, TEXAS 71

DATE OF SAMPLE			ALGAE (Number per ml.)									INERT DIATOM SHELLS (No. per ml.)		DIATOMS DOMINANT SPECIES AND PERCENTAGES (See Introduction for Code Identification*)									OTHER MICROPLANKTON, FUNGI AND SHEATHED BACTERIA (No. per ml.)	MICROINVERTEBRATES					DOMINANT GENERA (See Introduction for Identification)
				BLUE-GREEN		GREEN		FLAGELLATES (Pigmented)		DIATOMS																			
MONTH	DAY	YEAR	TOTAL	COCCOID	FILA-MENT-OUS	COCCOID	FILA-MENT-OUS	GREEN	OTHER	CENTRIC	PENNATE	CENTRIC	PENNATE	FIRST*	PER-CENTAGE	SECOND*	PER-CENTAGE	THIRD*	PER-CENTAGE	FOURTH*	PER-CENTAGE	OTHER PER-CENTAGE		PROTOZOA (No. per ml.)	ROTIFIERS (No. per liter)	CRUSTACEA (No. per liter)	NEMATODES (No. per liter)	OTHER ANIMAL FORMS (No. per liter)	
10	7	60	3000	1300	20	870		90		90	590		30	89	50	8	20	38	10	70	10	10			3				7--22
11	11	60	2700	160	50	130		290		620	1450	90	130	38	30	26	20	90	10	82	10	30	130		16				--773
12	9	60	4400	200		270		90		180	3710	90	270	4	10	38	10	70	10	26	10	60	180						78763
1	6	61	3000			200		160		50	2600	70	360	38	60	5	10	70	10	26	10	20	90			2			---63
2	3	61	900			90				20	800	20	130	92	30	91	10	38	10	71	10	40	40	30	999		4		7--6-
2	17	61	2400	20		360		200		70	1700	20	110	38	30	92	20	80	10	5	10	40		10	12	1			78-63
3	10	61	5100			200		130		220	4600	40	530	70	20	38	10	5	10	80	10	50			10	8			--763
3	17	61	6600			1200		330		870	4240	240	840	38	20	80	10	82	10	86	10	50							-8-63
4	7	61	2600			200		160		490	1780	90	530																--973
4	13	61	3600	190		1990				850	600	100	120	80	20	38	10	49	10	82	10	50	20						-8926
5	5	61	1600			270		40		230	1040	20	210	80	40	87	10	53	10	6	10	40			7	1			--963
5	12	61	10400	750	150	3230		350	40	440	5400	210	680	38	10	94	10	84	10	26	10	60			3				78863
6	7	61	10300	270	130	4040		290		680	4930	80	100	47	70	84	10	38	*	26	*	10			194	1	1		-8863
6	21	61	9400	750	20	3710		410		190	4330	60	520	47	90	56	*	21	*										-8366
7	5	61	2700	220	110	850				160	1390	70	560	47	50	71	10	26	10	8	10	30	20		53		3		-8363
7	19	61	6400	580	70	890		130		470	4300	310	220	47	20	8	10	9	10	27	10	50	310	20	53	1			74-63
8	9	61	10200	540	20	1370	90	120		210	7870	100	250	45	40	13	10	8	10	38	*	40				1			--763
8	23	61	4500		20	890	40	250		580	2730	20	170	47	10	92	10	75	10	68	10	70							78-63
9	6	61	4000	870	40	330	40	290		100	2300		170	89	30	8	20	70	20	38	10	20			146		1		7-362
9	20	61	500			100		290		80	20	20	40										40		148	2			-----

NATIONAL WATER QUALITY NETWORK

ORGANIC CHEMICALS

RECOVERED BY CARBON FILTER TECHNIQUE

RESULTS IN MICROGRAMS PER LITER
(Parts per billion)

STATE TEXAS

MAJOR BASIN WESTERN GULF

MINOR BASIN RIO GRANDE /LOWER/ BELOW PECOS RIVER

STATION LOCATION RIO GRANDE AT
BROWNSVILLE, TEXAS 71

DATE OF SAMPLE					GALLONS FILTERED	EXTRACTABLES					CHLOROFORM EXTRACTABLES								
BEGINNING			END								NEUTRALS								
MONTH	DAY	YEAR	MONTH	DAY		TOTAL	CHLOROFORM	ALCOHOL	ETHER INSOLUBLES	WATER SOLUBLES	TOTAL	ALIPHATICS	AROMATICS	OXYGENATED COMPOUNDS	LOSS	WEAK ACIDS	STRONG ACIDS	BASES	LOSS
1	25	61	2	7	4980	168	39	129	1	8	18	3	3	12	0	4	2	1	5
3	3	61	4	1	20880	*	-	-	-	-	-	-	-	-	-	-	-	-	-
5	10	61	5	27	4760	141	47	94	2	13	13	2	2	9	0	6	3	1	9
7	5	61	7	20	4914	152	29	123	1	6	15	3	2	9	1	3	1	1	2
8	9	61	8	26	4860	126	35	91	1	9	12	2	1	9	0	5	2	1	5

*SAMPLE NOT PROCESSED-EXCESSIVE FLOW

NATIONAL WATER QUALITY NETWORK

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL ANALYSES

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN RIO GRANDE /LOWER/ BELOW PECOS RIVER
STATION LOCATION RIO GRANDE AT
BROWNSVILLE, TEXAS 71

DATE OF SAMPLE			TEMP. (Degrees Centigrade)	DISSOLVED OXYGEN mg/l	pH	B.O.D. mg/l	C.O.D. mg/l	CHLORINE DEMAND		AMMONIA-NITROGEN mg/l	CHLORIDES mg/l	ALKALINITY mg/l	HARDNESS mg/l	COLOR (scale units)	TURBIDITY (scale units)	SULFATES mg/l	PHOSPHATES mg/l	TOTAL DISSOLVED SOLIDS mg/l	COLIFORMS per 100 ml.
MONTH	DAY	YEAR						1-HOUR mg/l	24-HOUR mg/l										
10	3	60	28.1	-	8.3	-	-	-	-	-	160	120	180	-	120	-	-	-	-
10	7	60	29.9	-	8.3	-	-	-	-	-	360	180	480	-	80	-	-	-	-
10	14	60	29.9	-	8.3	-	-	-	-	-	240	140	380	-	50	-	-	-	-
10	21	60	24.0	-	8.3	-	-	-	-	-	200	170	340	-	90	-	-	-	-
10	28	60	20.7	-	8.3	-	-	-	-	-	180	600	460	-	2800	-	-	-	-
11	4	60	25.9	-	8.3	-	-	-	-	-	80	120	400	-	500	-	-	-	-
11	11	60	24.5	-	8.3	-	-	-	-	-	240	140	380	-	140	-	-	-	-
11	18	60	24.5	-	8.3	-	-	-	-	-	280	160	500	-	35	-	-	-	-
11	25	60	25.0	-	8.3	-	-	-	-	-	380	190	580	-	40	-	-	-	-
12	3	60	20.5	-	8.3	-	-	-	-	-	240	170	400	-	35	-	-	-	-
12	9	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
12	15	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200
12	16	60	18.0	-	8.3	-	-	-	-	-	340	170	560	-	90	-	-	-	-
12	23	60	-	-	8.3	-	-	-	-	-	360	200	520	-	30	-	-	-	200
12	30	60	24.0	9.0	8.3	1.3	-	-	-	-	300	200	480	-	100	-	-	-	170
1	6	61	25.5	8.9	8.3	.9	-	-	-	-	480	180	560	-	100	-	-	-	550
1	13	61	24.5	-	8.3	-	-	-	-	-	220	150	420	-	30	-	-	-	91
1	20	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200
1	27	61	21.5	-	8.3	-	-	-	-	-	220	180	500	-	55	-	-	-	-
2	24	61	24.5	8.5	8.3	1.5	-	-	-	-	240	168	180	-	110	-	-	-	-
3	3	61	26.5	8.6	8.3	1.2	-	-	-	-	200	118	190	-	90	-	-	-	-
3	10	61	23.5	8.5	8.3	1.1	-	-	-	-	180	126	150	-	95	-	-	-	260
3	17	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	280
3	24	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
3	25	61	25.0	8.3	8.3	1.3	-	-	-	-	110	154	288	-	150	-	-	-	-
4	1	61	23.0	-	7.9	-	-	-	-	-	180	150	284	-	170	-	-	-	-
4	14	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64
4	21	61	27.0	8.3	7.9	1.0	-	-	-	-	210	144	300	-	65	-	-	-	-
4	28	61	28.5	8.4	7.9	.9	-	-	-	-	290	130	340	-	40	-	-	-	200
5	5	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	450
5	10	61	25.5	9.0	7.8	1.8	-	-	-	-	255	100	304	-	60	-	-	-	250
5	17	61	31.5	7.6	7.9	1.4	-	-	-	-	265	120	304	-	65	-	-	-	1000
5	24	61	31.0	7.2	7.8	.9	-	-	-	-	150	150	248	-	140	-	-	-	690
5	31	61	29.4	7.8	7.9	1.1	-	-	-	-	155	140	268	-	185	145	1.0	-	2000
6	7	61	30.5	8.7	7.9	.8	-	-	-	-	190	120	280	-	30	140	.8	-	40
6	13	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	600
6	14	61	30.0	8.0	7.9	.8	-	-	-	-	180	130	276	-	160	90	1.0	-	-
6	21	61	30.0	8.0	7.9	2.0	-	-	-	-	140	130	260	-	60	90	-	-	400
6	28	61	30.5	7.6	6.7	1.8	-	-	-	-	250	90	300	-	20	180	-	-	-

NATIONAL WATER QUALITY NETWORK

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL ANALYSES

STATE TEXAS
MAJOR BASIN WESTERN GULF
MINOR BASIN RIO GRANDE /LOWER/ BELOW PECOS RIVER
STATION LOCATION RIO GRANDE AT
BROWNSVILLE, TEXAS 71

DATE OF SAMPLE			TEMP. (Degrees Centigrade)	DISSOLVED OXYGEN mg/l	pH	B.O.D. mg/l	C.O.D. mg/l	CHLORINE DEMAND		AMMONIA-NITROGEN mg/l	CHLORIDES mg/l	ALKALINITY mg/l	HARDNESS mg/l	COLOR (scale units)	TURBIDITY (scale units)	SULFATES mg/l	PHOSPHATES mg/l	TOTAL DISSOLVED SOLIDS mg/l	COLIFORMS per 100 ml.
MONTH	DAY	YEAR						1-HOUR mg/l	24-HOUR mg/l										
7	5	61	30.5	8.2	7.9	1.4	-	-	-	-	295	100	328	-	20	200	-	-	*100
7	12	61	31.5	7.8	7.9	1.1	-	-	-	-	230	110	272	-	12	120	-	-	80
7	19	61	31.0	7.2	7.8	.9	-	-	-	-	225	130	296	-	10	-	-	-	10
7	26	61	32.5	7.4	7.8	1.3	-	-	-	-	250	110	312	-	15	-	.5	-	700
8	2	61	29.5	7.6	7.3	1.1	-	-	-	-	260	100	308	-	30	180	.4	-	430
8	9	61	26.5	8.0	7.8	1.6	-	-	-	-	255	120	300	-	35	180	.4	-	170
8	16	61	30.0	7.7	7.9	1.2	-	-	-	-	195	120	280	-	40	150	.3	-	270
8	23	61	26.5	7.1	7.6	1.7	-	-	-	-	190	130	272	-	140	130	.5	-	1700
8	30	61	29.0	7.6	7.6	1.3	-	-	-	-	150	130	244	-	145	-	-	-	380
9	6	61	30.0	7.9	7.8	1.8	-	-	-	-	195	140	300	-	16	-	-	-	850
9	13	61	29.0	8.2	7.9	1.1	-	-	-	-	170	120	248	-	-	-	-	-	1800
9	20	61	27.0	7.1	-	1.1	-	-	-	-	145	100	224	-	-	-	-	-	100
9	28	61	29.0	7.0	7.7	.7	-	-	-	-	170	100	248	-	40	-	-	-	200

Strontium 90—Continued

Strontium 90 Activity, μμc/liter—1960–1961

Sampling Point	October–December	January–March	April–June	July–September
KLAMATH RIVER				
at Keno, Oreg.	—	—	.3	—
LITTLE MIAMI RIVER				
at Cincinnati, Ohio	—	1.1	—	1.1
MERRIMACK RIVER				
above Lowell, Mass.	—	—	—	.7
MISSISSIPPI RIVER				
at New Orleans, La.	—	—	—	—
at Vicksburg, Miss	—	—	—	—
at Delta, La.	—	—	.6	.4
at West Memphis, Ark.	1.0	—	—	—
at Cape Girardeau, Mo.	—	.7	—	.8
at East St. Louis, Ill.	—	—	.5	—
at Burlington, Iowa	—	—	—	.6
at Dubuque, Iowa	—	—	—	—
at Lock & Dam No. 3 below St. Paul, Minn.	—	—	—	.9
MISSOURI RIVER				
at St. Louis, Mo.	—	1.1	—	1.4
at Kansas City, Kans.	1.4	—	—	—
at St. Joseph, Mo.	.5	—	—	—
at Omaha, Nebr.	—	—	.7	—
at Yankton, S. Dak.	—	—	—	.6
at Bismarck, N. Dak.	—	—	.6	—
at Williston, N. Dak.	—	.8	—	—
MONONGAHELA RIVER				
at Pittsburgh, Pa.	—	—	—	.4
NORTH PLATTE RIVER				
above Henry, Nebr.	—	—	—	—

Sampling Point	October–December	January–March	April–June	July–September
OHIO RIVER				
at Cairo, Ill.	—	—	—	1.1
at Evansville, Ind.	.8	—	—	—
at Louisville, Ky.	—	—	—	.4
at Cincinnati, Ohio	—	.3	—	—
at Huntington, W. Va.	.4	—	—	—
at East Liverpool, Ohio	—	—	—	.4
OUACHITA RIVER				
at Bastrop, La.	—	—	—	—
PLATTE RIVER				
above Plattsmouth, Nebr.	—	—	—	—
POTOMAC RIVER				
at Great Falls, Md.	—	1.3	—	—
at Williamsport, Md.	—	—	.8	—
RAINY RIVER				
at Baudette, Minn.	—	—	—	—
RED RIVER (North)				
at Grand Forks, N. Dak.	—	—	1.5	—
RED RIVER (South)				
at Alexandria, La.	—	—	—	1.0
at Index, Ark.	—	.4	—	—
at Denison, Tex.	.7	—	—	—
RIO GRANDE				
at Brownsville, Tex.	—	—	.3	—
at Laredo, Tex.	—	.4	—	—
at El Paso, Tex.	—	.4	—	—
below Alamosa, Colo.	—	—	—	.4

CHAPTER VI

INTER-AGENCY FUNCTIONS

SUMMARY

In this region, the Department of Health, Education, and Welfare is represented on the Arkansas-White-Red Basins Inter-Agency Committee (AWRBIAC). The Committee was established in 1955 by the Inter-Agency Committee on Water Resources (ICWR) to assist in the coordination of the water and related land resources activities of the States and Federal Agencies in the Arkansas, White and Red River Basins. The eight states represented on the AWRBIAC are: Arkansas, Colorado, Kansas, Louisiana, Missouri, New Mexico, Oklahoma, and Texas. Federal Agencies in addition to the Department of Health, Education, and Welfare on the Committee are: Department of Agriculture, Department of the Army, Department of Commerce, Federal Power Commission, Department of the Interior and Department of Labor. The objectives of the AWRBIAC are to provide in the three basins improved facilities and procedures for the coordination of the policies, programs, and activities in the field of water resources development and related programs of the above Federal Agencies and States. For reference purposes, the Arkansas-White-Red River Basins map appears at the conclusion of this chapter.

The chairman agency is selected on an annual basis from the seven participating Federal agencies. During Fiscal Year 1964, the Department of Health, Education, and Welfare representative is serving as its chairman.

Technical matters of the Committee requiring detailed consideration and study are referred to AWRBIAC subcommittees. Upon the recommendation of the Department of Health, Education, and Welfare representative and concurred in by the other Committee members, a Stream Sanitation Advisory Committee was established. As the name implies, the committee is advisory to AWRBIAC and not a creation of the Main Committee.

AWRBIAC STREAM SANITATION ADVISORY COMMITTEE

Membership of the Stream Sanitation Advisory Committee is comprised of the eight State Sanitary Engineers of the AWR Basins and the Department of Health, Education, and Welfare representing the Main Committee. The Advisory Committee was recognized by AWRBIAC at its 43rd meeting on May 1, 1963 and requested to deal with problems relating to uniform criteria of pollution control and other health aspects of waters in the basin. The State Sanitary Engineer of the Texas State Department of Health is currently the Chairman of the Committee.

The functions of the Stream Sanitation Advisory Committee are enumerated below:

1. To develop and recommend to AWRBIAC from time to time a statement of proposed functions and objectives of the subcommittee and outline procedures and programs for their accomplishment;
2. Consider as part of Item 1 above, the following:
    a. Identify present and future stream sanitation problems which might affect the stream's ultimate use;
    b. Obtain the advice, counsel, and cooperation of all other water pollution control agencies in the various states in

order to properly identify their responsibilities;

c. Identify to the extent possible, areas of need for greater coordination between States and Federal Agencies in providing high quality water for all legitimate uses;

d. Develop, as far as desirable and correct, comprehensive stream sanitation objectives for the AWR River Basins;

e. Cooperate with the Basic Data Subcommittee for determination of immediate and future needs for water quality data;

f. Develop effluent quality criteria for various industries;

g. Consider the development of uniform standards for sewage works to cover the AWR area (similar to the Great Lakes-Upper Mississippi Board of States Sanitary Engineers);

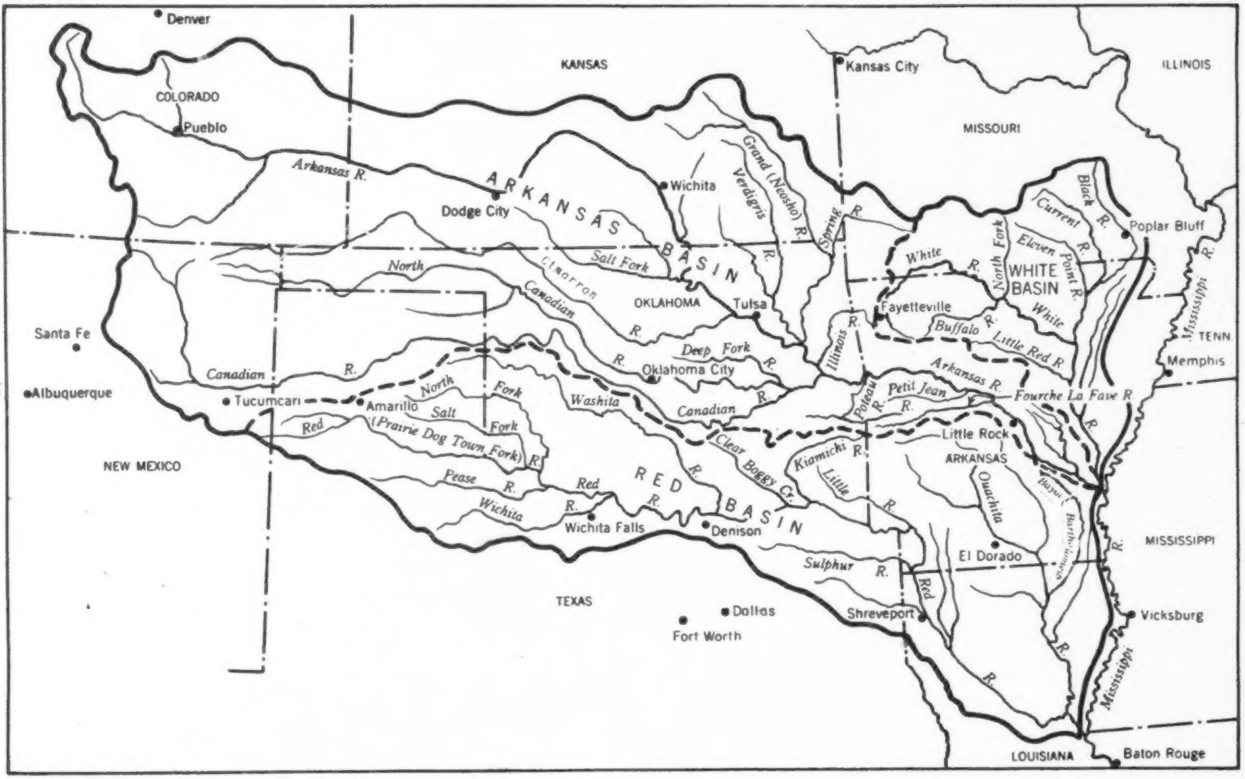
h. Recommend research and demonstration projects on this subject that would be beneficial to the States in the AWR River Basins area;

i. Develop an inventory of kinds and amounts of pesticides and herbicides used in the area and their characteristics; keep up-to-date an inventory of national research as it relates to their harmful effect on municipal and industrial waters; make recommendations from time to time on how these can be minimized;

j. Keep AWRBIAC informed on the matter of mosquito control as it may relate to water resource development;

k. Make recommendations when necessary, pertaining to revision of the manual, Sanitation in Recreational Areas.

The Stream Sanitation Advisory Committee held its initial meeting in September of this year and has considered the charge as outlined above. The state members are now presenting their views to the chairman concerning their primary interests in interstate stream sanitation control matters in order that an effective over-all program of action may be developed and pursued by the eight participating states.


Denver
COLORADO
Pueblo
KANSAS
Kansas City
MISSOURI
ILLINOIS
Arkansas R.
ARKANSAS BASIN
Dodge City
Wichita
Grand (Neosho) R.
Verdigris R.
Spring R.
Salt Fork
Cimarron
Canadian R.
North
OKLAHOMA
Tulsa
Deep Fork R.
Oklahoma City
Canadian R.
Illinois R.
Fayetteville
White R.
North Fork
Black R.
Current R.
Eleven Point R.
WHITE BASIN
White
Buffalo R.
Little Red R.
Poplar Bluff
Mississippi R.
TENN
Memphis
Arkansas R.
Fourche La Fave R.
Poteau R.
Petit Jean R.
Little Rock
ARKANSAS
Santa Fe
Albuquerque
Canadian
R.
Tucumcari
Amarillo
North Fork
Salt Fork
Red
(Prairie Dog Town Fork) R.
Washita
Clear Boggy Cr.
Kiamichi R.
Little R.
Ouachita
Bayou Bartholomew
NEW MEXICO
Pease R.
Red R.
Wichita R.
Wichita Falls
RED BASIN
Denison
El Dorado
MISSISSIPPI
Sulphur R.
Red
R.
Shreveport
Vicksburg
Mississippi
TEXAS
Dallas
Fort Worth
LOUISIANA
Baton Rouge

ARKANSAS-WHITE-RED RIVER BASINS

CHAPTER VII

CONSTRUCTION GRANTS PROGRAM

SUMMARY

The construction grants program under Public Law 660 was initiated July 31, 1956. In the five state region, which includes Arkansas, Louisiana, New Mexico, Oklahoma and Texas, served by the Public Health Service office in Dallas there have been 446 projects for sewage treatment facilities completed with federal assistance (Tables I and IV). There are currently 321 active projects (Tables II and V), and 260 are proposed within the next two years (Tables III and VI). These projects represent a total project cost of about 275 million dollars and federal grants of 80 million dollars. Contract awards for sewage treatment plant construction in 1962 and 1963 are at a rate more than double the average rate in the five year period immediately preceding the start of the program. Two states in this region--Texas with 207, and Oklahoma with 186 projects approved--ranked second and third in the nation in this category on August 31, 1963.

Texas has completed 131 federally aided projects to date. Grants amounting to 9.6 million dollars have resulted in total construction of over 42 million dollars. There are 110 currently active projects in the state, of which 22 have grants from the Accelerated Public Works program only. The remainder are under Public Law 660 with a few having some grant funds from Accelerated Public Works. These currently active projects represent a total cost of 33.9 million dollars and are assisted with 10.1 million dollars of federal funds. There are 79 projects now pending in Texas with a total cost of 26 million dollars.

STATUS OF THE PROGRAM

To date the five states in the region have used all of the federal grant monies that have been available. In fiscal year 1962, 8.6 million dollars in grant funds was available in this region. In fiscal year 1963 and fiscal year 1964 an average of 17.4 million dollars was provided annually. These funds were from increased appropriations for Public Law 660 plus Accelerated Public Works.

The backlog of projects in the active planning stage is decreasing to some extent. This is due in part to the substantially increased amount of grant funds available the past two years.

However, there still remains in the region a sufficient backlog of projects to more than utilize the amount of authorized Public Law 660 funds for fiscal year 1965.

TABLE I

November 1963

SUMMARY OF FEDERALLY AIDED WASTE TREATMENT PROJECTS COMPLETED UNDER PUBLIC LAW 660 SINCE JULY 31, 1956

STATE	Number Projects	Eligible Costs	Federal Grants	Population
TEX	131	$42,236,562	$9,670,124	2,127,167
ARK	88	15,936,932	3,786,680	606,235
LA	56	19,779,272	5,719,038	554,094
N.M.	48	14,562,489	3,804,740	332,807
OKLA	123	17,702,290	4,828,483	799,903
GRAND TOTALS	446	$110,217,545	$27,809,065	4,420,206

Note: Included in the above figures are two projects in New Mexico which have received grants under the Accelerated Public Works Program with an eligible cost of $384,000 and a grant amount of $182,000.

The population figures shown are those provided in the application for a grant and are based upon either the population of the area served or the population equivalent for which the works were designed. They are included only to give a general idea of the progress made in the program.

TABLE II

November, 1963

SUMMARY OF FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION UNDER PUBLIC LAW 660

STATE	Number Projects	Eligible Costs	Federal Grants	Population
TEX	110	$33,899,420	$10,142,118	1,351,144
ARK	68	16,667,354	5,727,021	302,278
LA	46	32,832,257	13,161,049	701,561
N.M.	23	4,692,666	1,464,433	318,851
OKLA	74	13,409,314	4,486,568	492,001
GRAND TOTALS	321	$101,501,011	$34,981,189	3,165,835

Note: The above figures include 115 projects which are receiving Accelerated Public Works grants. These projects have eligible costs of $34,628,000 and are receiving grants of $16,680,000.

The State of Texas has 22 projects under the Accelerated Public Works Program with eligible costs of $4,546,000 and grants of $2,271,000.

The population figures shown are those provided in the application for a grant and are based upon either the population of the area served or the population equivalent for which the works were designed. They are included only to give a general idea of the progress made in the program.

TABLE III November, 1963

SUMMARY OF PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER PUBLIC LAW 660

STATE	Number Projects	Eligible Costs	Federal Grants Requested	Population
TEX	79	$26,199,133	$7,201,753	1,951,562
ARK	49	12,188,375	3,261,127	153,651
LA	46	15,679,526	5,268,691	160,105
N.M.	13	1,143,734	320,833	128,095
OKLA	73	6,219,778	1,820,225	204,614
GRAND TOTALS	260	$61,431,046	$17,872,629	2,598,027

Note: The above figures include 44 projects requesting assistance under the Accelerated Public Works Program with an eligible cost of $8,000,000 and grant requests of $3,805,000.

The population figures are those stated on the application for the grant.

1/ EXPLANATION SHEET FOR TABLES IV, V AND VI

COMPLETED - Projects completed since July 31, 1956.

UNDER CONSTRUCTION - This includes all active projects that have received a grant and are not completed.

PROPOSED - Projects which the states have advised will likely develop within the next two years.

IDENTIFICATION OF SYMBOLS - Type of treatment: S (secondary)
P (primary)

Facility: STP (sewage treatment plant)
OF (outfall)
Int (interceptor)
FM (force main)
PS or LS (lift station)
Rehab (rehabilitation)
Imp (improvements)

Project No.: WPC - indicates the grant funds are from the Public Law 660 authorization only.
APW - indicates the grant funds are from the accelerated public works program only.
WPC-APW - indicates grant funds are from a combination of the two.

Population: The population figures shown are those that were stated in the application for a grant and are based on either the population served or the population equivalent for which the works were designed. They do not represent the present population of the community.

TABLE IV 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Abilene	WPC-Tex-97	S	Sewage treatment, LS, & FM	$917,470.00	$250,000.00	100,000
Alto Loma	WPC-Tex-115	S	STP & Int.	60,750.00	18,225.00	1,600
Alamo	WPC-Tex-137	S	Rehab. of existing STP, new oxidation ponds, industrial waste & OF	86,400.00	25,919.98	3,750
Anna	WPC-Tex-127	S	STP, OF & Int.	77,969.00	23,390.00	1,500
Andrews	WPC-Tex-100	S	STP	97,043.00	29,113.02	20,000
Angleton	WPC-Tex-89	S	STP & Int.	297,292.00	89,187.81	10,000
Anthony	WPC-Tex-50	S	STP & OF	102,798.00	30,839.44	3,500
Aubrey	WPC-Tex-45	S	STP & OF	29,789.00	8,936.79	1,000
Azle	WPC-Tex-185	S	STP,OF & Int.	170,375.00	50,571.45	2,500
Balch Springs	WPC-Tex-135	S	STP & OF	435,880.00	126,852.98	6,000
Bay City	WPC-Tex-132		Trunk sewer & LS	268,328.00	80,498.35	14,100
Ballinger	WPC-Tex-91	S	Add'ns to existing STP	8,000.00	2,399.87	6,000

TABLE IV CONT'D 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Baytown	WPC-Tex-78	S	Add'ns to existing STP & LS	389,200.00	116,760.00	15,000
Beeville	WPC-Tex-25	S	STP	295,210.00	84,210.00	21,000
Blue Ridge	WPC-Tex-126	S	STP & OF	37,174.00	11,152.08	1,000
Bridgeport	WPC-Tex-138	S	STP	128,375.00	38,512.48	6,500
Bronte	WPC-Tex-134	S	STP, OF & LS	44,902.00	13,092.00	2,000
Brownsboro	WPC-Tex-176	S	STP & OF	81,947.00	24,468.00	750
Burkburnett	WPC-Tex-98	S	STP, OF & LS	517,795.00	155,030.10	12,000
Cameron	WPC-Tex-2	S	STP & OF	158,332.00	47,499.56	10,000
Canton	WPC-Tex-151	S	STP & OF	119,040.00	35,712.03	3,000
Center	WPC-Tex-88	S	STP & Int.	305,727.00	90,000.00	6,500
Channelview	WPC-Tex-193	S	STP imp.	79,759.00	23,927.00	6,250
Chico	WPC-Tex-70	S	STP & Int.	40,234.00	12,070.29	850
Cleburne	WPC-Tex-66	S	STP add'ns & imp.	142,255.00	34,830.00	25,000
Collinsville	WPC-Tex-35		Int.	22,356.00	6,706.94	750

TABLE IV CONT'D 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Conroe	WPC-Tex-144	S	STP imp.	111,139.00	33,300.00	20,000
Crowley	WPC-Tex-102	S	STP & OF	95,070.00	28,520.99	2,000
Crystal City	WPC-Tex-168	S	STP,OF,Int., & LS	362,187.00	108,074.37	10,000
Danbury	WPC-Tex-189	S	STP, Int. & LS	124,572.00	37,371.48	2,000
DeLeon	WPC-Tex-69	S	STP	43,853.00	12,825.00	3,500
Desoto	WPC-Tex-187	S	STP, Int. & OF	212,258.00	63,677.00	2,500
Deer Park	WPC-Tex-63	S	STP, OF & LS	259,943.00	75,000.00	10,000
Denison	WPC-Tex-57	S	STP, OF & Int.	854,881.00	250,000.00	10,000
Dickinson	WPC-Tex-55	S	STP imp.	137,656.00	30,386.00	12,000
Dimmitt	WPC-Tex-124		Int.	50,596.00	15,170.70	5,500
Duncanville	WPC-Tex-114	S	STP, OF & Int.	170,243.00	50,331.00	3,500
Early	WPC-Tex-157		OF & LS	61,830.00	18,292.52	1,100
Ennis	WPC-Tex-141	S	STP, Int.,LS & FM	470,630.00	137,850.00	6,000
Eden	WPC-Tex-65	S	STP & OF	54,937.00	16,481.14	3,000
El Paso	WPC-Tex-42	S	STP add'ns	768,230.00	221,100.00	244,400

TABLE IV CONT'D 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Emory	WPC-Tex-79	S	STP & OF	53,128.00	15,938.42	1,250
Ferris	WPC-Tex-44	S	STP, Int., LS & FM	114,055.00	34,216.54	3,500
Floresville	WPC-Tex-201	S	STP imp.	87,278.00	25,680.00	3,230
Ft. Worth	WPC-Tex-37	S	STP & OF	1,948,020.00	250,000.00	50,000
Freeport	WPC-Tex-76	S	STP, Int. & LS	742,837.00	222,851.10	13,800
Friona	WPC-Tex-152	S	STP & OF	61,201.00	17,702.73	3,500
Garland	WPC-Tex-39	S	STP & OF	1,099,719.00	250,000.00	83,200
Garwood	WPC-Tex-145	S	STP, Int. & OF	53,572.00	13,678.50	775
Gatesville	WPC-Tex-136	S	STP	37,317.00	11,195.17	1,600
Gatesville	WPC-Tex-150	S	STP, Int. & OF	339,282.00	101,784.00	6,000
Giddings	WPC-Tex-15	S	STP & OF	55,258.00	16,230.00	2,200
Grandbury	WPC-Tex-53	S	STP, Int., OF & LS	164,953.00	49,041.60	5,000
Grand Prairie	WPC-Tex-4		Int., LS & FM	302,130.00	77,160.30	32,700
Groesbeck	WPC-Tex-80	S	STP	79,083.00	23,724.86	3,500
Hallettsville	WPC-Tex-21	S	STP	109,508.00	28,650.00	4,000

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Haltom City	WPC-Tex-128		OF, LS, & FM	164,539.00	49,361.83	15,000
Harlingen	WPC-Tex-95	S	STP & Int.	821,891.00	246,567.26	20,000
Hemphill	WPC-Tex-117	S	STP & OF	125,293.00	37,587.77	2,200
Hempstead	WPC-Tex-119	S	STP & OF	127,067.00	33,540.00	3,000
Henderson	WPC-Tex-68	S	STP & Int.	452,770.00	135,831.04	20,000
Hereford	WPC-Tex-64	S	STP add'ns.	47,962.00	14,349.00	4,800
Hillsboro	WPC-Tex-162	S	STP add'ns.	38,265.00	11,479.45	7,500
Hitchcock	WPC-Tex-90	S	STP & Int.	364,158.00	109,247.50	7,500
Houston	WPC-Tex-75	S	STP, OF & Int.	927,755.00	250,000.00	100,000
Hubbard	WPC-Tex-188	S	STP, OF, LS & FM	117,279.00	35,183.00	1,700
Iowa Park	WPC-Tex-130	S	STP enlargement	122,387.00	33,989.00	7,000
Joshua	WPC-Tex-167	S	STP, Int. & OF	125,204.00	37,561.05	1,500
Kaufman	WPC-Tex-109	S	STP	139,093.00	41,727.95	8,000
Kemah	WPC-Tex-147	S	STP add'ns & Int.	123,000.00	36,899.92	2,000
Kennedale	WPC-Tex-122	S	STP & OF	141,151.00	42,345.21	2,400

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Keller	WPC-Tex-92	S	STP & OF	17,848.00	5,354.50	2,000
Kleberg	WPC-Tex-184	S	STP, Int. & OF	392,656.00	117,140.00	8,350
Krum	WPC-Tex-173	S	STP & OF	54,270.00	16,280.90	1,000
Lake Worth Village	WPC-Tex-110	S	STP & LS	195,825.00	58,747.59	8,000
Lamesa	WPC-Tex-139	S	STP & OF	406,025.00	121,117.13	23,000
LaPorte	WPC-Tex-118	S	STP add'ns.	41,624.00	10,710.00	10,000
Lewisville	WPC-Tex-1	S	STP & OF	183,858.00	55,157.06	4,400
Liberty	WPC-Tex-22	S	STP	108,725.00	30,900.00	8,200
Lone Oak	WPC-Tex-86	S	STP & OF	56,458.00	16,937.00	1,000
Lubbock	WPC-Tex-149	S	STP expansion	688,123.00	176,100.00	70,000
Lufkin	WPC-Tex-106	S	STP imp., Int.& OF	953,656.00	250,000.00	30,000
Luling	WPC-Tex-175	S	STP add'ns.	87,145.00	26,143.36	5,000
Marshall	WPC-Tex-7	S	STP	464,418.00	102,300.00	40,000
Mathis	WPC-Tex-19	S	STP	100,274.00	30,082.28	10,500
McAllen	WPC-Tex-60	S	STP add'ns.	294,766.00	88,429.73	20,000

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Mercedes	WPC-Tex-26	S	STP add'ns.	127,628.00	36,000.00	10,065
Mesquite	WPC-Tex-12	S	STP	832,705.00	249,811.55	30,000
Nederland	WPC-Tex-108	S	STP imp. & Int.	694,173.00	204,057.90	15,000
New Braunfels	WPC-Tex-34	S	STP add'ns & OF	274,042.00	75,000.00	19,000
Olney	WPC-Tex-129	S	STP imp.	106,660.00	31,800.00	6,000
Orange	WPC-Tex-18	S	STP & LS	942,929.00	222,060.00	22,500
Paris	WPC-Tex-104	S	STP rehab.	59,683.00	17,904.75	35,000
Pearland	WPC-Tex-166	S	STP imp.	30,933.00	9,280.01	2,000
Petrolia	WPC-Tex-183	S	STP & OF	48,311.00	14,460.43	630
Perryton	WPC-Tex-131	S	STP & OF	285,957.00	85,787.20	8,000
Pineland	WPC-Tex-33	S	STP & OF	110,034.00	33,010.29	2,000
Plano	WPC-Tex-116	S	STP & Int.	483,381.00	98,670.00	5,000
Port Aransas	WPC-Tex-190	S	STP & OF	363,227.00	106,700.41	824
Port Arthur	WPC-Tex-103	S	STP	1,501,110.00	250,000.00	100,000
Port Lavaca	WPC-Tex-52	S	STP add'ns.	116,911.00	30,398.63	9,200

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Point Comfort	WPC-Tex-209		Int. & LS	9,767.00	2,930.24	1,453
Richmond	WPC-Tex-36	S	STP	54,879.00	16,463.77	4,060
Rosenberg	WPC-Tex-182	S	STP & Int.	484,566.00	145,369.87	17,500
Rusk	WPC-Tex-178	S	STP add'ns.	149,415.00	43,725.00	12,000
San Angelo	WPC-Tex-27	P	STP & OF	1,248,562.00	250,000.00	72,960
San Marcus	WPC-Tex-20		STP & LS imp.	144,159.00	43,247.85	12,000
Schertz	WPC-Tex-214	S	STP, Int. & OF	244,702.00	73,217.10	3,600
Sequin	WPC-Tex-77	S	STP & OF	516,493.00	140,164.50	20,000
Sherman	WPC-Tex-143	S	STP & OF	687,724.00	206,317.13	30,000
Silsbee	WPC-Tex-72	S	STP	314,856.00	94,456.90	10,000
Snyder	WPC-Tex-3	S	STP	24,771.00	7,431.36	16,800
Sour Lake	WPC-Tex-113	S	STP	43,225.00	12,967.50	1,500
Springtown	WPC-Tex-164	S	STP & OF	45,532.00	13,650.00	1,300
Sweetwater	WPC-Tex-16	S	STP & OF	1,013,023.00	250,000.00	25,000
Temple	WPC-Tex-38	S	STP	785,403.00	231,381.54	16,000

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Texas City	WPC-Tex-32		OF & LS	122,557.00	36,767.13	30,000
Three Rivers	WPC-Tex-73	S	STP	81,408.00	24,406.50	4,000
Thorndale	WPC-Tex-165	S	STP add'ns.	31,878.00	9,000.00	1,670
Throckmorton	WPC-Tex-120	S	STP	43,609.00	9,600.00	1,300
Tomball	WPC-Tex-154	S	STP enlargement	40,635.00	12,190.64	3,000
Trinity River Authority	WPC-Tex-84	S	STP & Int.	6,859,152.00	250,000.00	240,000
Uvalde	WPC-Tex-5	S	STP add'ns.	54,460.00	16,163.10	12,500
Van Alystyne	WPC-Tex-49	S	STP & OF	77,006.00	23,101.84	3,000
Waco	WPC-Tex-171		Int., OF & LS	201,802.00	58,798.55	2,000
Waxahachie	WPC-Tex-174	S	STP add'ns. & Int.	376,281.00	112,884.00	12,000
West Columbia	WPC-Tex-121	S	STP add'ns., Int. & OF	169,116.00	50,734.76	9,500
Wharton	WPC-Tex-29	S	STP, Int. & OF	271,285.00	81,385.40	10,000
Wolfe City	WPC-Tex-23	S	STP	42,871.00	12,861.29	2,100
Woodsboro	WPC-Tex-163	S	STP imp. & Int.	81,564.00	24,469.23	2,350

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Yoakum	WPC-Tex-51	S	STP & Int.	214,926.00	64,290.00	10,000
	131			$42,236,562.00	$9,670,124.49	2,127,167

TABLE IV CONT'D. 1/
COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Altheimer	WPC-Ark-86	S	STP,PS,FM,Int,OF	$ 72,773.00	$21,831.90	1,300
Bearden	WPC-Ark-75	S	STP,PS	43,197.00	12,959.19	2,000
Benton	WPC-Ark-34	S	STP,PS,FM,Int	229,335.00	68,800.62	18,000
Benton Unit	WPC-Ark-15	S	STP	141,048.00	42,211.50	3,800
Bentonville	WPC-Ark-27		OF	115,595.00	34,678.47	3,496
Bentonville	WPC-Ark-54	S	STP,PS,FM,OF	311,651.00	93,495.32	3,496
Berryville	WPC-Ark-101	S	STP	132,557.00	39,667.09	6,800
Bradford	WPC-Ark-47	S	STP,PS,FM,Int,OF	56,969.00	17,090.78	1,000
Caraway	WPC-Ark-43	S	STP,PS,FM,Int	96,953.00	29,086.01	1,500
Carlisle	WPC-Ark-73	S	STP,Int	83,909.00	25,172.71	3,500
Charleston	WPC-Ark-80	S	STP	21,170.00	6,351.00	1,850
College Heights	WPC-Ark-9	S	STP,Int	75,276.00	22,582.88	2,000
Conway	WPC-Ark-32	S	STP,PS,FM,Int	83,584.00	25,063.31	8,610
Conway	WPC-Ark-68	S	STP,PS	124,942.00	37,482.50	16,800
Conway	WPC-Ark-133		Int	24,303.00	7,291.00	500

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Crawfordsville	WPC-Ark-42	S	STP,PS,FM,Int	$ 61,116.00	$ 18,335.06	1,200
Crossett	WPC-Ark-39	S	STP,PS,FM	32,424.00	9,727.12	5,172
Danville	WPC-Ark-65	S	STP,OF	61,251.00	18,375.32	8,000
Decatur	WPC-Ark-53	S	STP,OF,Int	51,617.00	15,485.16	3,800
DeQueen	WPC-Ark-69	S	STP,Int	194,745.00	58,423.54	5,500
Des Arc	WPC-Ark-87	S	STP,PS,FM,Int	47,759.00	14,327.60	2,800
DeWitt	WPC-Ark-58		PS,FM,Int	44,012.00	13,203.51	2,843
Elaine	WPC-Ark-7	S	STP,PS,Int,OF	54,994.00	16,498.32	1,200
El Dorado	WPC-Ark-48	S	STP,PS,Int	482,825.00	144,847.41	42,500
Fayetteville	WPC-Ark-33	S	STP,PS,FM,Int	923,680.00	250,000.00	18,000
Fayetteville	WPC-Ark-116		Int, OF	92,025.00	27,607.00	18,000
Forbing Road	WPC-Ark-97		OF,Int	132,780.00	39,834.00	2,000
Forrest City	WPC-Ark-66		PS,FM,Int	58,573.00	17,571.80	200
Forrest City	WPC-Ark-108	S	STP,OF	24,400.00	7,320.12	200
Fordyce	WPC-Ark-51		Int,PS,FM	17,817.00	5,344.98	1,000
Geyer Springs	WPC-Ark-72		OF	36,130.00	10,839.08	1,000

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Gillett	WPC-Ark-60	S	STP,OF,Int,PS	$ 41,957.00	$ 12,587.03	1,040
Green Forest	WPC-Ark-31	S	STP	66,570.00	19,970.96	738
Greenwood	WPC-Ark-59	S	STP,PS,FM,Int,OF	84,387.00	25,315.99	1,634
Hamburg	WPC-Ark-62	P	STP	95,015.00	28,504.53	4,000
Harrison	WPC-Ark-28		OF	62,907.00	18,871.98	6,800
Heber Springs	WPC-Ark-106	S	STP,OF	81,418.00	24,425.25	3,650
Helena	WPC-Ark-93	S	STP,PS,FM,Int,OF	569,853.00	170,955.79	11,200
Holly Grove	WPC-Ark-17	S	STP,PS,FM	56,293.00	16,725.38	1,100
Hot Springs	WPC-Ark-115		Int	112,008.00	33,602.46	30,000
Humphrey	WPC-Ark-50	S	STP,PS,FM,Int,OF	54,343.00	16,302.99	1,000
Huttig	WPC-Ark-18	S	STP,PS,FM,Int,OF	38,232.00	11,469.69	1,200
Jacksonville	WPC-Ark-8	S	STP,PS,FM,Int,OF	171,016.00	51,304.93	6,500
Jacksonville	WPC-Ark-94	S	STP	77,065.00	23,119.64	17,800
Jonesboro	WPC-Ark-13	S	STP,OF	611,952.00	183,585.54	12,000
Judsonia	WPC-Ark-55	S	STP,PS,FM,Int,OF	73,815.00	22,144.00	1,600
Junction City	WPC-Ark-63	S	STP,PS,FM,Int	78,150.00	22,630.57	1,200

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Lake Village	WPC-Ark-23	S	STP,Int,OF	$184,800.00	$ 55,439.85	5,500
Little Rock	WPC-Ark-20	P	STP	2,126,000.00	250,000.00	100,000
Little Rock	WPC-Ark-29		OF	2,697,997.00	250,000.00	100,000
Little Rock	WPC-Ark-71		OF	102,514.00	30,754.06	100,000
Magnolia	WPC-Ark-100	S	STP	60,169.00	17,551.03	10,600
Malvern	WPC-Ark-5	S	STP,Int	55,575.00	16,672.45	9,243
Marianna	WPC-Ark-104		Int	12,424.00	3,727.24	5,134
Marmaduke	WPC-Ark-77	S	STP,PS,FM,Int	44,689.00	13,406.66	835
Marshall	WPC-Ark-6	S	STP,OF	46,514.00	13,954.26	1,800
McGehee	WPC-Ark-2	S	STP,PS,FM,Int	217,819.00	65,345.67	4,300
Mena	WPC-Ark-1	S	STP,OF	194,142.00	58,242.64	4,400
Mineral Springs	WPC-Ark-64	S	STP,PS,Int	23,610.00	7,083.03	750
Morrilton	WPC-Ark-22	S	STP,PS,FM,Int	256,468.00	76,940.49	10,000
Murfreesboro	WPC-Ark-19	S	STP,PS,Int	12,787.00	3,836.16	1,100
Murfreesboro	WPC-Ark-81	S	STP,PS	59,695.00	17,884.38	1,100
N. Little Rock	WPC-Ark-88	P	STP,PS,FM,OF	52,803.00	15,840.93	5,000

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Pangburn	WPC-Ark-26	S	STP, Int	$ 30,680.00	$ 9,168.60	700
Parkin	WPC-Ark-16		Int, PS	14,099.00	4,229.83	1,600
Pea Ridge	WPC-Ark-91	S	STP, OF, Int	56,107.00	16,832.19	1,050
Pocahontas	WPC-Ark-56	S	STP, PS, FM, OF, Int	179,516.00	53,854.00	4,200
Pulaski County	WPC-Ark-85		OF	136,276.00	40,882.92	3,700
Rogers	WPC-Ark-45	S	STP, PS, FM, OF	430,788.00	129,000.00	10,000
Rogers	WPC-Ark-114		OF	19,857.00	5,957.36	5,000
Searcy	WPC-Ark-12	S	STP, OF	102,738.00	30,821.44	10,370
Searcy	WPC-Ark-95	S	STP, Int	208,638.00	62,591.38	10,370
Siloam Springs	WPC-Ark-46	S	STP, OF, Int	185,471.00	55,641.20	4,000
Siloam Springs	WPC-Ark-96		Int	13,748.00	4,124.42	4,000
Southern St. Coll.	WPC-Ark-128	S	STP, OF, Int	57,022.00	17,106.00	1,600
Sparkman	WPC-Ark-24	S	STP, OF, Int, PS, FM	42,975.00	12,892.51	1,200
Springdale	WPC-Ark-4	S	STP	242,677.00	72,803.24	15,000
Springdale	WPC-Ark-92		OF, Int	19,201.00	5,760.34	7,000
Strong	WPC-Ark-103	S	STP, PS, FM, OF	59,480.00	17,681.34	750

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Stuttgart	WPC-Ark-37		Int,OF,PS,FM	$ 95,722.00	$ 28,716.55	9,000
Texarkana	WPC-Ark-30		OF	67,168.00	19,716.60	21,000
Texarkana	WPC-Ark-74	S	STP,Int,OF,PS,FM	891,700.00	250,000.00	40,000
Truman	WPC-Ark-113	S	STP,PS,FM,Int	111,162.00	33,348.00	4,000
Waldron	WPC-Ark-98	S	STP,OF	42,703.00	12,810.93	1,300
Walnut Ridge	WPC-Ark-40	S	STP,PS,FM,Int	165,455.00	49,636.38	7,600
Warren	WPC-Ark-25	S	STP,PS,FM,OF,Int	295,572.00	88,671.74	9,000
Weiner	WPC-Ark-21	S	STP,Int,OF	55,691.00	16,707.19	1,200
Wynne	WPC-Ark-67	S	STP,PS,FM	60,089.00	18,026.71	5,900
	88			$15,936,932.00	$3,786,680.75	606,235

TABLE IV Continued 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF LOUISIANA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Abbeville	WPC-La-23	S	STP,PS,FM	343,003.00	98,299.71	30,000
Amite City	WPC-La-28	S	STP	154,088.00	46,226.37	4,500
Baton Rouge	WPC-La-42	P	STP	876,393.00	250,000.00	79,500
Baton Rouge	WPC-La-50	P	STP	1,007,396.00	250,000.00	100,000
Baton Rouge	WPC-La-58	-	INT,FM,PS	942,653.00	250,000.00	125,000
Baton Rouge	WPC-La-60	-	INT,OF,PS	710,822.00	213,246.00	3,000
Baton Rouge	WPC-La-61	-	INT,OF	1,554,780.00	450,000.00	3,000
Bastrop	WPC-La-49	-	OF	64,687.00	19,406.13	12,769
Bernice	WPC-La-52	S	STP,PS,FM,INT	108,822.00	32,369.70	1,524
Bogalusa	WPC-La-56	P	STP,PS,FM,INT	729,289.00	218,786.00	25,000
Caddo Parish	WPC-La-63	S	STP	488,491.00	134,254.71	10,000
Caddo Parish	WPC-La-74	-	INT,FM,PS	478,558.00	137,900.00	8,000
Calcasieu Parish	WPC-La- 7	S	STP,OF	126,781.00	38,034.22	1,860
Chatham	WPC-La-55	S	STP,INT,FM,PS	47,743.00	14,058.42	1,050
Church Point	WPC-La- 6	S	STP,PS,OF	222,641.00	66,792.22	2,897

TABLE IV Continued 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF LOUISIANA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Covington	WPC-La-16	S	STP,PS	264,836.00	77,109.00	10,000
Cullen	WPC-La-47	S	STP,INT,FM,PS	83,430.00	25,028.87	3,500
DeQuincy	WPC-La-64	S	STP,FM,PS	117,644.00	35,293.00	5,300
DeRidder	WPC-La-34	S	STP,INT.FM,PS	409,402.00	122,820.62	15,000
Farmersville	WPC-La-21	S	STP,PS,OF	142,051.00	42,615.34	5,000
Franklinton	WPC-La-18	S	STP	69,139.00	20,741.59	2,340
Gonzales	WPC-La-26	S	STP,INT,FM,PS	541,265.00	161,000.00	7,500
Gueydon	WPC-La-40	S	STP,PS	153,643.00	46,092.82	3,500
Independence	WPC-La-89	S	STP,INT,PS,FM	151,311.00	45,393.56	2,500
Jackson	WPC-La-37	S	STP,LS,OF	83,835.00	25,150.39	2,100
Jefferson Parish	WPC-La- 1	S	STP	841,871.00	250,000.00	25,000
Jefferson Parish	WPC-La-35	S	STP,PS,FM	396,929.00	119,078.83	9,000
Junction City	WPC-La-71	S	STP	16,731.00	5,019.20	639
Houma	WPC-La-68	S	STP,FM,PS	872,130.00	250,000.00	60,000
Kaplan	WPC-La-67	S	STP	126,249.00	37,874.79	7,500
Lafayette	WPC-La-27	S	STP,INT	954,405.00	250,000.00	20,000

TABLE IV Continued 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF LOUISIANA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Lake Arthur	WPC-La-43	S	STP,INT,PS	342,133.00	102,639.76	6,500
Lockport	WPC-La-14	S	STP,INT,PS,OF	232,840.00	69,851.95	2,200
Lutcher	WPC-La-30	S	STP,INT,PS,FM	215,854.00	64,756.35	5,000
Morganza	WPC-La-73	S	STP,INT,OF,PS,FM	126,935.00	37,401.01	1,480
Mooringsport	WPC-La-10	S	STP,INT	82,966.00	24,889.70	1,500
New Iberia	WPC-La- 8	S	STP	873,900.00	250,000.00	30,000
Patterson	WPC-La- 5	S	STP,PS	108,700.00	31,239.39	3,500
Port Allen	WPC-La-39	S	STP	342,496.00	102,748.93	10,000
Placquemine	WPC-La-45	S	STP,INT,PS	155,984.00	45,292.34	1,000
Port Barre	WPC-La-57	S	STP,INT,OF,PS,FM	173,823.00	52,147.02	2,500
Opelousas	WPC-La-77	S	STP	43,375.00	13,012.44	17,417
Slidell	WPC-La-20	S	STP,PS,INT,FM	434,821.00	130,446.20	6,500
St. Bernard	WPC-La-13	P	STP,PS,FM,OF	473,888.00	142,166.29	10,000
St. Charles	WPC-La-33	S	STP,INT,OF,FM,PS	578,787.00	167,000.00	7,000
St. Joseph	WPC-La-51	S	STP,INT,PS,FM	80,998.00	24,299.40	1,659
St. Tammany	WPC-La-70	S	STP,PS	97,175.00	29,152.40	320

TABLE IV Continued 1/
COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF LOUISIANA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Tallulah	WPC-La-11	S	STP,PS,OF	346,926.00	104,077.88	10,000
Terrebonne Parish	WPC-La-25	S	STP,PS,FM	59,992.00	17,994.00	1,000
Terrebonne Parish	WPC-La-54	S	STP,PS,FM	191,093.00	56,662.18	3,400
Vinton	WPC-La- 3	S	STP,INT,PS,FM	279,044.00	83,713.25	3,500
Winnfield	WPC-La- 9	S	STP,PS	391,900.00	117,569.97	11,000
Winnsboro	WPC-La-32	S	STP,INT,PS,FM	438,506.00	131,551.00	8,000
Westlake	WPC-La-17	S	STP,PS,FM,INT	273,228.00	81,968.34	5,500
Zwolle	WPC-La-82	S	STP,PS,FM,OF,INT	94,557.00	28,367.19	2,268
Terrebonne Par.	WPC-La-78	-	LS,FM,Int.	258,333.00	77,500.00	3,500
56 Projects				19,779,272.00	5,719,038.48	554,094

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF NEW MEXICO

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Alamogordo	WPC-NM-17	P	Plant add'ns & OF	$314,833.00	$ 90,000.00	21,723
Albuquerque	WPC-NM-4	S	Plant add'ns	1,091,580.00	250,000.00	201,189
Albuquerque	WPC-NM-16	S	12 chlorinating stations	129,988.00	16,000.00	201,189
Albuquerque	WPC-NM-25		OF	918,615.00	250,000.00	201,189
Albuquerque	WPC-NM-39	S	Plant add'ns	2,188,076.00	240,000.00	201,189
Albuquerque	WPC-NM-54		Int & FM	1,279,649.00	383,894.00	201,189
Albuquerque	WPC-NM-66		Int	946,856.00	284,056.84	201,189
Artesia	WPC-NM-35	S	STP & OF	300,000.00	90,000.00	8,200
Aztec	WPC-NM-7	S	STP & int.	259,646.00	63,429.00	3,287
Bayard	WPC-NM-15	S	STP & OF	120,195.00	33,000.00	2,119
Belen	WPC-NM-48	S	STP add'ns	182,299.00	54,457.50	4,950
Belen	WPC-APW-NM-70		Int & FM	219,102.00	99,930.59	4,950
Bloomfield	WPC-NM-24	S	STP & Int	119,314.00	35,794.15	1,300
Carlsbad	WPC-NM-13	S	Plant add'ns	522,571.00	156,681.34	28,600
Carriozozo	WPC-NM-8	S	STP & OF	52,814.00	15,844.13	1,389

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATEMENT PROJECTS - STATE OF NEW MEXICO

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Cloudcroft	WPC-NM-19	S	STP	$ 88,636.00	$25,000.00	2,407
Clovis	WPC-NM-29	S	Plant add'ns	143,584.00	43,075.33	17,300
Clovis	WPC-NM-55	S	Plant add'ns & Int	290,901.00	87,270.28	25,000
Deming	WPC-NM-49		Int & OF	144,060.00	43,218.06	6,870
Espanola	WPC-NM-11		Int	58,913.00	17,673.87	1,976
Eunice	WPC-NM-28	S	Plant add'ns	129,000.00	38,700.00	5,000
Farmington	WPC-NM-9		Ints	56,237.00	16,871.14	29,000
Farmington	WPC-NM-23	S	Plant addn's & Int	642,761.00	192,828.00	29,000
Fort Sumner	WPC-NM-2	S	STP	115,759.00	26,022.00	2,300
Gallup	WPC-NM-1	S	STP, Int, & OF	220,687.00	60,157.69	9,133
Gallup	WPC-NM-31	S	Plant add'ns	118,808.00	35,642.51	13,500
Glorieta	WPC-NM-42		Ints	11,427.00	3,428.24	100
Grants	WPC-NM-10	S	STP & OF	253,770.00	69,900.00	6,000
Hobbs	WPC-NM-26	S	Plant addhs	75,267.00	22,580.18	30,000
Las Cruces	WPC-NM-6	S	Plant add'ns & Ints	252,253.00	56,772.00	19,000

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF NEW MEXICO

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Las Cruces	WPC-NM-30	S	Plant add'ns & Int	$ 181,533.00	$ 54,459.99	19,000
Las Vegas	WPC-NM-65	S	Plant add'ns & Int	279,710.00	83,913.00	7,790
Los Lunas	WPC-APW-NM-34	S	STP & Int.	165,172.00	82,586.00	1,186
Lovington	WPC-NM-20	S	STP & int.	438,929.00	110,000.00	14,000
Milan	WPC-NM-21		Int & FM	160,721.00	48,216.32	392
Moriarty	WPC-NM-50		Ints	84,737.00	25,420.37	710
New Mexico State Univ	WPC-NM-37		Relief sewer for STP	27,339.00	8,201.72	5,000
New Mexico Boys Sch.	WPC-NM-60		Ints.	32,168.00	9,650.64	289
Northern N.M. College	WPC-NM-52	S	Lagoons & Ints.	31,346.00	9,403.74	400
Organ	WPC-NM-44	S	Lagoons & Ints.	18,439.00	5,531.00	196
Roswell	WPC-NM-5		Ints.	77,787.00	22,887.15	35,000
Ruidoso	WPC-NM-12	S	STP & Ints.	392,089.00	117,626.84	2,000
Santa Fe	WPC-NM-3		OF	18,364.00	4,514.15	32,000
Santa Fe	WPC-NM-38	S	STP	712,869.00	213,860.64	32,000

TABLE IV CONT'D. 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF NEW MEXICO

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Santa Fe	WPC-NM-41	S	Plant add'ns & Int.	$ 287,041.00	$ 86,112.25	32,000
Santa Rosa	WPC-NM-22	S	STP	126,698.00	36,134.30	2,340
Silver City	WPC-NM-14	S	STP & OF	196,596.00	58,978.76	8,700
Tularosa	WPC-NM-45	S	STP add'ns & OF	83,390.00	25,016.85	2,650
	4					
	48			$14,562,489.00	$3,804,740.57	1,337,807

TABLE IV CONT'D. 1/
COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Aline	WPC-Okla-123	S	STP,FM,PS	$ 31,092.00	$ 9,327.51	385
Allen	WPC-Okla-79	S	STP,OF,Int.	104,111.00	31,233.28	1,200
Altus	WPC-Okla-145	S	STP,Int.,PS	54,889.00	16,466.00	1,000
Ardmore	WPC-Okla-25	S	STP,Int.,OF	594,787.00	150,000.00	12,500
Arnett	WPC-Okla-41	S	STP,Int.	15,966.00	4,789.75	690
Bartlesville	WPC-Okla-55		Int.,PS,FM	305,458.00	91,637.40	28,000
Beaver City	WPC-Okla-61	P	STP,Int.,PS	42,233.00	12,669.80	2,000
Bethany	WPC-Okla-126		PS,FM,Int.	307,048.00	92,114.47	12,300
Blair	WPC-Okla-62	S	STP,OF	8,384.00	2,515.29	1,000
Blanchard	WPC-Okla-102	S	STP,PS,Int.	72,476.00	21,742.75	1,390
Boswell	WPC-Okla-88	S	STP,Int.	75,627.00	22,688.18	875
Broken Arrow	WPC-Okla-38	S	STP,Int.	311,898.00	93,569.54	6,000
Broken Bow	WPC-Okla-31	S	STP,PS,Int.,FM	171,036.00	51,310.85	2,000
Cache	WPC-Okla-5	S	STP,OF	31,381.00	8,688.95	1,000

TABLE IV CONT'D. 1/
COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Caddo	WPC-Okla-118		Int.	$ 16,268.00	$ 4,880.54	900
Calera	WPC-Okla-128	S	STP, Int.	67,360.00	20,207.95	700
Calumet	WPC-Okla-96	S	STP, Int., PS, FM	26,872.00	8,061.50	400
Canute P.W.A.	WPC-Okla-163	S	STP, Int., OF	36,500.00	10,950.00	370
Carmen	WPC-Okla-70	S	STP, Int., PS, OF	50,810.00	15,243.08	650
Carnegie	WPC-Okla-3	S	STP	36,039.00	10,736.70	1,700
Cashion	WPC-Okla-144	S	STP, Int.	28,089.00	8,426.79	220
Chattanooga	WPC-Okla-106	S	STP, Int.	28,157.00	8,446.97	370
Checotah	WPC-Okla-39	S	STP, OF	149,487.00	44,846.06	2,640
Chelsea	WPC-Okla-11	S	STP, OF	22,440.00	6,000.00	2,000
Chicakasha	WPC-Okla-9	S	STP	96,082.00	28,824.49	17,500
Choctaw	WPC-Okla-129	S	STP, Int., OF, FM, PS	69,897.00	20,969.00	1,400
Chouteau	WPC-Okla-15	S	STP, Int., PS, OF	149,853.00	43,500.00	650
Claremore	WPC-Okla-82	S	STP, Int.	576,195.00	172,800.00	7,000
Clinton	WPC-Okla-60	S	STP, Int.	102,750.00	30,825.00	8,500
Connors	WPC-Okla-156	S	STP, Int.	19,250.00	5,774.88	1,300

TABLE IV CONT'D 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Copan	WPC-Okla-65	S	STP,Int.	$ 95,826.00	$ 27,747.73	1,000
Cushing	WPC-Okla-29	S	STP,Int.	474,971.00	140,153.96	16,000
Deer Creek	WPC-Okla-150	S	STP,Int.,OF	27,591.00	8,277.31	240
Del City	WPC-Okla-57	S	STP	70,766.00	21,229.86	11,200
Dill City	WPC-Okla-33	S	STP,Int.	22,689.00	6,806.82	450
Drummond	WPC-Okla-86	S	STP,Int.	18,625.00	5,252.28	400
Drumright	WPC-Okla-2	S	STP,PS,Int.	123,375.00	36,995.00	5,000
East Duke	WPC-Okla-56	S	STP,Int.	25,999.00	7,799.84	500
East Oklahoma A&M	WPC-Okla-115	S	STP,Int.,OF,PS	14,723.00	4,417.00	830
Elmore City	WPC-Okla-64	S	STP,Int.,OF,PS	71,825.00	21,547.50	1,100
El Reno	WPC-Okla-99	S	STP,Int.,PS	339,218.00	101,765.54	10,300
Eufaula	WPC-Okla-52	S	STP,Int.,OF,FM,PS	243,381.00	73,014.35	2,750
Fargo	WPC-Okla-42	S	STP,Int.	12,124.00	3,637.15	500
Forgan	WPC-Okla-83	S	STP,Int.	23,651.00	7,095.23	1,000
Fort Cobb	WPC-Okla-100	S	STP	12,136.00	3,640.82	720

TABLE IV CONT'D 1/
COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Fort Supply	WPC-Okla-59	S	STP,Int.	$ 17,789.00	$ 4,276.42	850
Goltry	WPC-Okla-92	S	STP,Int.	17,134.00	5,140.06	500
Gore	WPC-Okla-108	S	STP,Int.,OF	131,579.00	38,564.56	400
Grandfield	WPC-Okla-93	S	STP,Int.	34,193.00	10,258.04	1,425
Grove	WPC-Okla-22	S	STP,Int.,OF	85,353.00	25,605.95	1,800
Harrah	WPC-Okla-37	S	STP,Int.,PS	38,787.00	11,309.43	1,000
Haskell	WPC-Okla-151	S	STP,PS,OF	106,426.00	31,927.69	1,900
Hennessey	WPC-Okla-48	S	STP,Int.	51,996.00	15,598.83	1,600
Hollis	WPC-Okla-81	S	STP,Int.	37,666.00	11,299.74	4,400
Hugo	WPC-Okla-90	S	STP,Int.,OF,PS,FM	322,609.00	96,782.69	4,500
Indianhoma	WPC-Okla-91	S	STP,Int.,OF	27,470.00	8,240.00	750
Jet	WPC-Okla-89	S	STP,Int.	33,208.00	9,962.26	680
Kingfisher	WPC-Okla-73	S	STP,Int.	90,000.00	27,000.00	4,000
Kingston	WPC-Okla-20	S	STP,Int.,OF,PS	47,305.00	13,880.27	1,000
Lawton	WPC-Okla-76	S	STP	762,466.00	228,739.91	50,000

TABLE IV CONT'D 1/
COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Lawton	WPC-Okla-78		OF	$ 585,121.00	$ 175,536.30	50,000
Lawton	WPC-Okla-103		Int.	439,330.00	131,798.87	50,000
Lexington	WPC-Okla-116	S	STP,Int.,PS,FM	48,528.00	13,183.05	1,100
Lindsay	WPC-Okla-34	S	STP	49,194.00	14,758.11	6,000
Locust Grove	WPC-Okla-16	S	STP,Int.,PS	136,885.00	41,065.57	800
Luther	WPC-Okla-13	S	STP,Int.,OF,PS	38,325.00	11,497.42	450
Luther	WPC-Okla-206		PS,FM	9,505.00	2,152.08	517
Mangum	WPC-Okla-30	S	STP	140,803.00	42,240.92	4,300
Manitou	WPC-Okla-101	S	STP,OF	36,343.00	10,902.80	300
Mannford	WPC-Okla-97	S	STP,Int.,PS	41,513.00	12,453.80	600
Marietta	WPC-Okla-1	S	STP	77,971.00	23,391.42	1,875
Marietta	WPC-Okla-140		Int.	10,000.00	3,000.00	800
McLoud	WPC-Okla-153	S	STP,PS	26,241.00	7,872.15	1,000
Medford	WPC-Okla-77	S	STP	6,523.00	1,957.04	1,400
Muskogee	WPC-Okla-26		PS,FM,OF	719,839.00	150,000.00	37,000

TABLE IV CONT'D 1/
COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Muskogee	WPC-Okla-36	P	STP	$ 689,100.00	$ 180,000.00	13,289
Moore	WPC-Okla-134	S	STP,FM,PS,Int.,OF	135,525.00	40,657.56	3,500
Mooreland	WPC-Okla-127	S	STP,OF,Int.	34,359.00	10,307.85	900
Norman	WPC-Okla-19	S	STP,OF	291,597.00	87,479.06	40,000
North Enid	WPC-Okla-117	S	STP,Int.	46,534.00	13,960.12	300
Okarche	WPC-Okla-104	S	STP,Int.	28,131.00	8,439.26	530
Oklahoma City D.T.	WPC-Okla-74	S	STP,Int.	50,148.00	14,958.60	500
Oklahoma City	WPC-Okla-7	S	STP	507,490.00	152,246.91	243,500
Oklahoma County	WPC-Okla-67	S	STP,OF	1,407,740.00	250,000.00	20,000
Pauls Valley	WPC-Okla-132	S	STP,PS,FM	93,795.00	28,138.61	6,900
Pawnee	WPC-Okla-23	S	STP	29,605.00	8,881.51	2,900
Poteau	WPC-Okla-119	S	STP,Int.	173,449.00	52,034.00	1,440
Prague	WPC-Okla-49		Int.	18,057.00	5,417.16	1,500
Purcell	WPC-Okla-112	S	STP,OF,PS	72,486.00	21,745.92	4,000
Ripley	WPC-Okla-130	S	STP	22,679.00	6,803.57	450

TABLE IV CONT'D 1/
COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Roff	WPC-Okla-136	S	STP,Int.	$ 66,942.00	$ 20,082.63	640
Savanna	WPC-Okla-135	S	STP,PS,OF	103,310.00	30,993.14	1,100
Seminole	WPC-Okla-46	S	STP,Int.	325,130.00	97,539.14	12,000
Shattuck	WPC-Okla-85	S	STP,PS,Int.,OF	124,451.00	37,335.16	1,700
Shawnee	WPC-Okla-75	S	STP,Int.	264,015.00	79,204.43	25,000
Skiatook	WPC-Okla-131	S	STP,OF,PS,FM	131,608.00	39,482.00	4,000
South Coffeyville	WPC-Okla-54	S	STP, Int.	49,701.00	14,910.17	1,200
Sperry	WPC-Okla-110		PS	19,334.00	5,800.26	876
Stringtown	WPC-Okla-45	S	STP,PS,FM	39,814.00	11,944.34	500
Taloga	WPC-Okla-58	S	STP,Int.	20,449.00	6,134.83	500
Tecumseh	WPC-Okla-63	S	STP,Int.	139,229.00	41,768.65	2,700
Tipton	WPC-Okla-141	S	STP,Int.	46,526.00	13,957.70	1,100
Tonkawa	WPC-Okla-72		OF	15,659.00	4,697.55	3,600
Tulsa	WPC-Okla-27	S	STP	1,011,690.00	150,000.00	99,000

TABLE IV CONT'D. 1/
COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Tulsa	WPC-Okla-32		Int.	$ 700,254.00	$ 191,100.00	76,000
Tulsa	WPC-Okla-68		Int.,PS,FM	300,649.00	90,194.62	76,000
Tulsa County U.S.A.	WPC-Okla-109		Int.,OF,PS	321,019.00	91,799.40	76,000
Tulsa M.W.A.	WPC-Okla-171	S	STP,Int.	184,276.00	55,282.00	1,000
Tuttle	WPC-Okla-121	S	STP,Int.,OF	42,211.00	12,663.19	715
Tyrone	WPC-Okla-50	S	STP,Int.	30,844.00	9,253.30	500
Valley Brook	WPC-Okla-149	S	STP,Int.,PS	80,972.00	24,291.45	1,500
The Village	WPC-Okla=66	S	STP	98,440.00	29,532.00	11,000
The Village	WPC-Okla-133		Int.	47,809.00	14,342.81	5,200
Union City	WPC-Okla-94	S	STP,Int.	18,602.00	5,580.53	300
Walters	WPC-Okla-69		Int.	37,877.00	11,363.15	2,700
Washington	WPC-Okla-137	S	STP,Int.	23,737.00	7,121.12	300
Watonga	WPC-Okla-148		Int.	32,787.00	9,836.16	3,200
Waukomis	WPC-Okla-113	S	STP,Int.,OF,PS,FM	54,651.00	16,395.22	575
Wayne	WPC-Okla-44	S	STP,OF	18,233.00	5,308.50	500

TABLE IV CONT'D 1/

COMPLETED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Weatherford	WPC-Okla-71	S	STP,Int.	$ 167,067.00	$ 50,120.06	4,000
Wellston	WPC-Okla-95	S	STP,Int.,PS,FM	37,780.00	11,333.94	1,000
Wilburton	WPC-Okla-47	S	STP,Int.,PS	70,854.00	21,152.06	2,000
Woodward	WPC-Okla-40	S	STP,Int.	126,238.00	37,871.39	10,000
	123			$17,702,290.00	$4,828,483.53	799,903

TABLE V 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Alba	APW-Tex-267	S	STP & OF	$ 50,000.00	$ 25,000.00	472
Alief	WPC-Tex-247	S	STP, OF, & Int.	116,350.00	34,905.06	1,000
Alto	APW-Tex-255	S	STP	63,220	31,610.00	869
Athens	WPC-Tex-181	S	STP, Int, & OF	500,000.00	150,000.00	10,260
Baird	WPC-Tex-210	S	STP, Int & OF	144,760.00	40,375.00	1,750
Barry	WPC-Tex-218	S	OF & STP	21,400.00	6,420.00	200
Jefferson CoWC&ID#14 (Beaumont)	APW-Tex-273	S	STP, LS, Int & OF	121,700.00	60,850.00	700
Beckville	APW-Tex-250	S	STP & OFM	62,000.00	31,000.00	657
Belton	WPC-Tex-179	S	STP, Int. with LS	103,353.00	31,005.84	9,830
Big Spring	WPC-Tex-153	S	STP & Int.	1,080,000.00	250,000.00	29,500
Blanco	WPC-Tex-225	S	LS, FM, TP & OF	135,555.00	40,666.50	1,100
Blossom Prairie	WPC-Tex-245	S	STP & OF	36,913.00	11,073.95	1,500
Boerne	WPC-Tex-288	S	STP	26,000.00	7,800.00	3,100
Bogata	WPC-Tex-216	S	STP, OF & Int	85,600,00	25,680.00	1,112

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Bowie	WPC-Tex-278	S	STP & OF	$ 183,400.00	$ 55,020.00	5,000
Brady	APW-Tex-261	S	STP & OF	377,130.00	188,565.00	5,338
Celina	WPC-Tex-277	S	STP & OF	52 , 500.00	15,750.00	2,000
Centerville	APW-Tex-262	S	STP add'n.& Int	33,000.00	16,500.00	836
Clyde	WPC-Tex-299	S	STP	100,000.00	30,000.00	4,000
Commerce	WPC-Tex-81	S	STP, LS, FM, OF	415,737.00	124,721.10	20,000
Corpus Christi	WPC-Tex-213	S	STP	1,406,000.00	421,800.00	65,000
Corpus Christi	WPC-Tex-293		Int & LS	1,433,700.00	430,110.00	167,600
Crawford	WPC-Tex-237	S	STP, OF, Int	80,000.00	24,000.00	480
Daisetta	WPC-Tex-244	S	STP & OF	75,750.00	22,725.00	1,500
DeKalb	WPC-Tex-228	S	STP, OF & Int	184,000.00	55,200.00	2,042
Denton	WPC-Tex-300		Int & LS	220,300.00	66,090.00	30,000
Denton	WPC-Tex-142	S	Activated sludge plant	1,197,228.00	250,000.00	18,000
Detroit	WPC-Tex-203	S	STP, OF line	68,500.00	20,550.00	676
Dickinson	WPC-Tex-202	S	STP, Int & OF	918,944.00	275,683.05	4,715

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Dodd City	WPC-Tex-229	S	STP & OF	$ 37,400.00	$ 11,220.00	239
Duncanville	WPC-Tex-301	S	STP expansion	170,000.00	51,000.00	10,000
Electra	WPC-Tex-233	S	STP, Int, OF,LS	146,000.00	43,800.00	4,759
Elgin	WPC-Tex-207	S	STP additions	104,700.00	31,410.00	3,511
Fairmont Park (Harris Co.WCID#56)	WPC-Tex-285	S	STP	190,200.00	57,060.00	7,250
Farmersville	WPC-Tex-180	S	STP, OF & Int	200,000.00	60,000.00	2,021
Fort Worth	WPC-Tex-222	S	STP expansion	4,400,000.00	735,960.00	433,229
Friendswood (Galv.Co.WCID#15)	APW-Tex-284	S	STP, OF	150,000.00	75,000.00	1,200
Frisco	WPC-Tex-217	S	STP & OF	79,000.00	23,700.00	1,250
Fritch	WPC-Tex-291	S	STP, OF, LS & FM	89,200.00	26,760.00	4,000
Godley	WPC-Tex-211	S	STP, Int & OF	33,900.00	10,110.00	441
Gonzales	WPC-Tex-304	S	STP improvements	210,000.00	63,000.00	8,100
Graford	WPC-Tex-280	S	STP, OF, PS	62,300.00	18,690.00	600
Groves	WPC-Tex-191	S	STP, LS & Int	1,121,134.00	250,000.00	17,654

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Gunter	WPC-Tex-59	S	STP & OF	$ 54,600.00	$ 16,380.00	1,000
Hale Center	WPC-Tex-276	S	STP additions	45,000.00	13,500.00	3,500
Hart	WPC-Tex-198	S	STP, OF & Int	52,000.00	15,600.00	675
Hidalgo	WPC-Tex-282	S	STP, LS & FM	127,000.00	38,100.00	1,400
Houston	WPC-Tex-169	S	STP, Int & OF	1,164,718.00	247,922.67	22,800
Houston	WPC-Tex-306	S	STP, STP enlarg. Int, & OF	1,474,400.00	442,320.00	30,000
Italy	WPC-Tex-298	S	STP & transmission facilities	125,000.00	37,500.00	1,500
Jefferson	APW-Tex-264	S	STP, OF, LS, FM	170,700.00	85,350.00	3,250
Keene	WPC-Tex-307	S	STP enlarg.,OF,LS	121,300.00	36,390.00	2,500
Kirbyville	APW-Tex-256	S	STP, OF	100,000.00	50,000.00	1,660
Kountze	APW-Tex-309	S	STP, OF	90,000.00	45,000.00	1,768
Lake Barbara	WPC-Tex-239	S	STP, OF, Int	90,500.00	27,150.00	850
Lake Dallas MUA	WPC-Tex-283	S	STP, OF	116,700.00	35,010.00	1,500
LaMarque	WPC-Tex-125	S	LS, FM & OF	351,555.00	105,466.45	11,800

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Laredo	APW-Tex-290	S	STP addn's	$ 600,000.00	$ 300,000.00	36,000
League City	WPC-Tex-235		Int sewers & LS	181,350.00	54,405.00	3,175
Leonard	WPC-Tex-197	S	STP & OF	47,997.00	14,398.75	1,700
Lubbock	WPC-Tex-208		Int & OF sewer	796,200.00	238,860.00	128,068
Marble Falls	WPC-Tex-177	S	STP, Int & OF lines	334,000.00	100,200.00	2,161
Markham	WPC-Tex-308	S	STP, Int,OF & LS	51,000.00	15,300.00	1,200
Marlin	APW-Tex-269	S	STP	300,000.00	150,000.00	6,918
Maud	WPC-APW-Tex-196	S	STP & OF	221,500.00	110,750.00	951
Merkel	WPC-Tex-286	S	STP	214,800.00	64,440.00	10,000
Mesquite	WPC-Tex-230	S	STP addn's	1,000,000.00	250,000.00	80,000
Midlothian	WPC-Tex-236	S	STP & OF	130,000.00	39,000.00	4,000
Miles	WPC-Tex-212	S	STP, OF & PS	70,300.00	21,090.00	1,000
Mineral Wells	WPC-Tex-266		OF,LS,FM, & Pump equip	174,100.00	52,230.00	9,139
Mission	WPC-Tex-82	S	STP add'ns	311,552.00	93,465.49	10,756
Nash	WPC-APW-Tex-199	S	STP & OF	135,618.00	67,808.90	1,750

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
New Braunfels	WPC-Tex-221	S	STPaddns,OF,Int	$ 608,000.00	$ 182,400.00	17,000
Newton	APW-Tex-257	S	STP & OF	80,000.00	40,000.00	1,233
Nixon	WPC-Tex-241	S	STP & Int	175,816.00	52,744.92	2,000
No.Richland Hills (Tarrant Co.)	WPC-Tex-305	S	LS, FM & OF	122,200.00	36,660.00	750
Pasadena	WPC-Tex-156	S	STP	750,000.00	225,000.00	60,000
Pearsall	APW-Tex-274	S	STP, PS, Int	169,900.00	84,950.00	4,957
Pecan Gap	WPC-APW-Tex-219	S	STP, OF, Int	35,870.00	17,935.00	400
Pettus	WPC-Tex-227	S	STP, LS, OF, Int	175,000.00	52,500.00	1,025
Pinehurst	APW-Tex-263	S	STP	150,000.00	75,000.00	4,000
Plainview	WPC-Tex-226	S	STP	463,600.00	139,080.00	36,000
Plano	WPC-Tex-281	S	STP enlargement	290,000.00	87,000.00	13,500.
Pleasanton	WPC-Tex-205	S	STP add'ns, OF	139,214.00	41,764.28	6,250
Portland	WPC-Tex-292	S	STP, LS, OF	165,000.00	49,500.00	6,250
Port Neches (Jeff Co.WCID#9)	APW-Tex-270	S	STP	48,200.00	22,600.00	455

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Post	WPG-Tex-194		Int sewer	$ 70,000.00	21,000.00	4,663
Quinlan	WPC-Tex-243	S	STP & OF	69,100.00	20,730.00	621
Richland Springs	WPC-Tex-272	S	STP, Int & OF	61,000.00	18,300.00	331
Rising Star	WPC-Tex-251	S	STP, Int & OF	86,100,00	25,830.00	1,400
Rockport	WPC-Tex-234	S	STP improvements	41,400.00	12,420.00	2,989
Round Rock	WPC-Tex-242	S	STP improvements	64,000.00	19,200.00	3,000
Rowlett	WPC-Tex-160		OF & Int	98,806.00	29,641.84	600
Rusk	APW-Tex-258		Int's	138,500.00	69,250.00	4,900
Sabine Pass (Jeff Co.FSSD#1)	APW-Tex-265	S	STP, Int, OF, LS, FM	220,400.00	110,200.00	900
Silsbee	APW-Tex-238	S	STP & OF	159,500.00	79,750.00	7,100
Smiley	WPC-Tex-287	S	STP, OF, LS & FM	47,600.00	14,280.00	600
Sonora	WPC-Tex-220	S	STP, Int, OF	173,300.00	51,990.00	3,000
Terrell	WPC-Tex-200	S	STP, Int, OF	253,500.00	76,050.00	14,079
Texarkana	APW-Tex-303	S	STP improv.	313,000.00	156,500.00	30,218

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF TEXAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Texas City	APW-Tex-224	S	STP ext, OF, Int	$ 955,900.00	477,950.00	32,127
Trinity	WPC-Tex-215	S	STP	53,950.00	16,185.00	2,100
Troy	WPC-Tex-206	S	STP, Int & OF	61,500.00	18,450.00	1,000
Wake Village	APW-Tex-254	S	STP addn's & OF	193,600.00	96,800.00	2,000
West	WPC-Tex-279	S	STP addn's & OF	145,000.00	43,500.00	5,000
Wichita Falls	WPC-Tex-231	S	STP, Int & OF	2,020,000.00	600,000.00	62,500
Wilson	WPC-Tex-289	S	STP, PS, & OF	42,200.00	12,660.00	800
Wink	WPC-Tex-302	S	STP & OF	24,400.00	7,320.00	2,500
Woodville	WPC-Tex-204	S	STP, Int & OF	262,500.00	78,750.00	660
Windom	WPC-Tex-249	S	STP & Collect.Sys.	32,600.00	9,780.00	323
	110			$33,899,420.00	$10,142,118.80	1,351,144

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Ashdown	WPC-Ark-99	S	STP,PS,FM,Int	$95,744.00	$28,723.13	2,738
Atkins	WPC-Ark-125	S	STP,PS,FM,Int	64,000.00	19,200.00	1,391
Base Line	WPC-Ark-107		OF,Int	744,744.00	223,423.20	5,000
Bay	WPC-Ark-84	S	STP,PS,FM,Int	89,357.00	26,807.25	500
Beebe	WPC-Ark-118	S	STP,PS,FM,Int	153,775.00	46,132.46	1,697
Black Rock	WPC-APW-Ark-147	S	STP,OF,Int,PS,FM	47,600.00	23,800.00	554
Booneville	WPC-Ark-143		PS,FM,Int	37,700.00	11,300.00	2,690
Brinkley	WPC-Ark-179	S	STP,Int,PS,FM	149,500.00	44,850.00	5,000
Bryant	APW-Ark-159	S	STP,Int,OF	76,000.00	38,000.00	780
Calico Rock	WPC-APW-Ark-122	S	STP,PS,FM,Int,OF	145,087.00	72,543.13	825
Camden	WPC-Ark-35	S	STP,Int,OF,PS,FM	825,498.00	247,649.41	19,800
Clarendon	WPC-APW-Ark-124	S	STP,PS,FM,Int	169,000.00	65,816.00	2,293
Clarksville	WPC-APW-Ark-140	S	STP,PS,OF	150,000.00	72,800.00	3,919
Clinton	WPC-Ark-126	S	STP,OF,PS	262,000.00	78,600.00	744
Cotton Plant	WPC-APW-Ark-145	S	STP,PS	42,993.00	21,495.83	1,704

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Dardanelle	WPC-APW-Ark-141	S	STP,PS,FM,Int,OF	$510,000.00	$255,000.00	2,300
Dermott	WPC-APW-Ark-123	S	STP,PS,FM,Int	192,287.00	96,142.70	3,665
DeValls Bluff	WPC-APW-Ark-148	S	STP,PS,FM,Int	104,803.00	52,400.92	654
Dumas	WPC-Ark-176	S	STP,PS,FM,Int,OF	88,400.00	26,520.00	4,500
Fayetteville	WPC-Ark-173		Int	87,000.00	26,100.00	2,000
Foreman	APW-Ark-170	S	STP,PS,FM,Int,OF	81,300.00	40,650.00	1,000
Glenwood	WPC-APW-Ark-150	S	STP,PS,FM,Int	64,504.00	32,251.11	840
Gould	WPC-Ark-41	S	STP,PS,FM,Int	98,603.00	29,580.99	1,500
Green Forest	WPC-Ark-117	S	STP	30,000.00	9,000.00	1,050
Hampton	APW-Ark-160	S	STP,PS,FM,Int,OF	82,600.00	41,300.00	1,011
Harrisburg	WPC-APW-Ark-146	S	STP,PS,FM,Int,OF	106,065.00	53,032.61	1,481
Hazen	WPC-APW-Ark-149	S	STP,PS,Int,OF	70,016.00	35,007.90	1,456
Hope	WPC-Ark-78		PS,FM,OF	25,961.00	7,788.25	2,000
Hope	WPC-Ark-110	S	STP,PS,FM,Int,OF	81,708.00	24,512.48	8,380
Horatio	WPC-APW-Ark-134	S	STP,PS,FM,Int,OF	66,000.00	33,000.00	722
Hoxie	WPC-APW-Ark-142	S	STP,PS,FM,Int,OF	140,000.00	70,000.00	1,886

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Huntsville	WPC-APW-Ark-130	S	STP,PS,FM,Int,OF	$580,000.00	$290,000.00	1,100
Jasper	WPC-Ark-172	S	STP,PS,FM,Int,Of	81,400.00	24,420.00	273
Jonesboro	WPC-Ark-119		Int	138,300.00	41,490.00	9,113
Kensett	WPC-Ark-36	S	STP,PS,FM,Int,OF	71,598.00	20,000.00	1,068
Lake City	WPC-Ark-105	S	STP,PS,FM,Int,OF	75,585.00	22,675.00	1,262
Lepanto	WPC-Ark-177	S	STP,PS,FM,Int,OF	97,500.00	29,250.00	1,800
Lewisville	APW-Ark-158	S	STP	21,700.00	10,850.00	1,373
Little Rock	WPC-Ark-166		Int	51,100.00	15,330.00	1,896
McCrory	WPC-APW-Ark-121	S	STP,PS,FM	22,485.00	10,640.00	2,100
McNeil	WPC-Ark-163	S	STP,PS,FM,OF	56,000.00	16,800.00	746
McRae	WPC-Ark-111	S	STP,PS,FM,Int,OF	82,600.00	24,780.00	700
Melbourne	WPC-APW-Ark-135	S	STP,OF	62,200.00	31,100.00	571
Morrilton	WPC-Ark-164	S	STP,PS,FM,Int,OF	216,400.00	28,000.00	5,977
Mount Ida	WPC-APW-Ark-136	S	STP,PS,OF,Int	69,000.00	34,500.00	805
N. Little Rock	WPC-Ark-89	S	STP,Int,PS,OF,FM	816,080.00	244,824.00	57,405
N. Little Rock	WPC-Ark-90	S	STP,OF	1,124,500.00	250,000.00	78,202

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
N. Little Rock	WPC-Ark-129		Int	$2,024,538.00	$600,000.00	57,844
Ozark	WPC-APW-Ark-139	S	STP,PS,FM,Int	174,000.00	83,000.00	1,965
Paris	APW-Ark-154	S	STP,PS,FM,Int	102,600.00	51,300.00	5,600
Perryville	WPC-APW-Ark-138	S	STP,PS,FM,Int,OF	76,400.00	38,200.00	975
Piggott	WPO-Ark-44	S	STP,PS,FM,Int,OF	172,568.00	51,770.54	5,750
Pine Bluff	WPC-Ark-83	S	STP,PS,FM,Int,OF	950,000.00	250,000.00	30,000
Plumerville	WPC-APW-Ark-144	S	STP,PS,FM,Int	113,300.00	56,649.10	580
Sherwood	WPC-Ark-49	S	STP,PS,FM,Int,OF	146,604.00	43,981.10	1,200
Sheridan	WPC-Ark-82	S	STP,PS,FM,Int	133,781.00	40,134.30	2,000
Siloam Springs	WPC-Ark-112	S	STP	253,547.00	76,064.10	3,953
Smackover	WPC-Ark-52	S	STP,PS,FM,Int,OF	205,704.00	61,711.32	4,000
Springdale	WPC-Ark-127		Int,OF,PS,FM	187,300.00	56,190.00	10,074
Springdale	WPC-Ark-132	S	STP,PS,FM,Int,OF	1,666,000.00	499,800.00	11,895
Star City	APW-Ark-152	S	STP,Int	69,000.00	34,500.00	1,573
Stephens	WPC-Ark-76	S	STP,PS	32,435.00	9,730.00	2,000
Texarkana	WPC-APW-Ark-151		Int,OF	530,000.00	264,999.47	19,788

TABLE V CONT'D. 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Turrell	WPC-Ark-38	S	STP,PS,FM,Int	$ 75,400.00	$ 22,620.00	1,000
Van Buren	WPC-Ark-79	S	STP,PS,FM,OF,Int	572,284.00	171,685.20	7,500
Waldo	APW-Ark-157	S	STP,PS,FM,OF,Int	85,600.00	42,800.00	1,722
West Helena	WPC-APW-Ark-137	S	STP,PS,FM,Int,OF	540,600.00	270,300.00	10,800
Wilmot	WPC-APW-Ark-120	S	STP,PS,FM,Int	107,000.00	53,500.00	732
	68			$16,667,354.00	$5,727,021.50	302,278

TABLE V Continued 1/

UNDER CONSTRUCTION FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF LOUISIANA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Abbeville	APW-La-122	-	Int.,FM,PS	23,600.00	11,800.00	10,414
Bastrop	WPC-La- 97	S	STP,LS,FM,Int.	589,000.00	176,700.00	15,680
Baton Rouge	WPC-La- 76	P	STP,Int.,OF,PS	2,610,000.00	600,000.00	140,000
Broussard	WPC-APW-La-124	S	STP,LS,FM,Int.	162,000.00	79,400.00	2,250
Bunkie	WPC-La- 59	S	STP,LS,FM,Int.	506,667.00	152,000.00	9,000
Bunkie	APW-La-109	-	Int.	54,400.00	27,200.00	5,137
Caddo Parish S.D.#2	WPC-La- 46	S	STP,LS,FM,Int.	400,000.00	120,000.00	2,500
Crowley	WPC-APW-La-110	S	STP enlargement	368,000.00	174,400.00	25,000
Delcambre	WPC-La- 84	S	STP,LS,FM,Int.	222,917.00	66,875.00	3,000
Denham Springs	APW-La-136	S	STP,LS,FM,Int.	422,800.00	211,400.00	16,000
Epps	WPC-La- 85	S	STP,LS,FM,Int.	46,734.00	14,020.27	537
Franklin	WPC-La- 79	S	STP enlargement	275,000.00	82,500.00	14,150
Hammond	APW-La-114	S	STP,LS,FM,Int.	460,848.00	230,424.00	10,563
Harahan	WPC-APW-La- 81	S	STP,LS,FM,Int.	584,258.00	292,128.50	15,000
Jefferson Parish #9	APW-La- 75	S	STP,LS,FM,Int.	502,180.00	251,090.00	7,000

TABLE V Continued 1/

UNDER CONSTRUCTION FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF LOUISIANA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Jefferson Parish #8	APW-La- 93	S	STP,LS,FM,Int.	2,540,000.00	1,270,000.00	33,000
Jefferson Parish	WPC-La- 95	S	STP,LS,FM,Int.	210,294.00	63,088.30	4,000
Jefferson Parish	WPC-APW-La-100	S	STP,LS,FM,Int.	2,330,800.00	1,165,400.00	50,000
Jefferson Parish	APW-La-101	S	STP,LS,FM,Int.	2,084,300.00	1,042,150.00	18,000
Jefferson Parish	APW-La-102	S	STP,LS,FM,Int.	2,523,000.00	1,261,500.00	16,087
Jefferson Parish	APW-La-103	S	STP,LS,FM,Int.	539,200.00	269,600.00	19,488
Kenner	APW-La- 99	S	STP,LS,FM,Int.	1,725,900.00	862,950.00	25,000
Kinder	APW-La-121	S	STP,LS,FM,Int.	176,000.00	88,000.00	4,800
Lafayette	WPC-La- 88	-	LS,FM	301,058.00	90,317.40	49,440
Lafayette	WPC-La- 94	-	Int., LS,FM	805,321.00	241,746.22	49,440
Lecompte	APW-La-126	S	STP,LS,FM,Int.	170,320.00	85,100.00	2,000
Leesville	WPC-La- 19	S	STP improvements	52,000.00	15,600.00	4,670
Mansura	WPC-La-83	S	STP,LS,FM,Int.	120,130.00	36,039.00	2,340
Marksville	APW-La-118	S	STP,LS,FM,Int.	147,000.00	73,500.00	8,000
Monroe	WPC-La- 98	S	STP,LS,FM,Int.,OF	3,213,000.00	600,000.00	70,000
New Llano	WPC-APW-La- 15	S	STP,LS,FM,Int.	41,600.00	18,640.00	1,600

TABLE V Continued 1/
UNDER CONSTRUCTION FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF LOUISIANA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
New Orleans (Venetian)	APW-La-107	S	STP, LS, FM, Int.	273,980.00	136,990.00	4,800
New Orleans (Michoud)	APW-La-115	S	STP enlargement	353,400.00	176,700.00	15,000
New Orleans	APW-La-133	P	STP	3,835,900.00	1,367,000.00	142,700
North Hodge	WPC-La- 92	S	STP, LS, FM, Int., OF	62,200.00	18,659.89	900
Oakdale	APW-La-120	-	Int. repairs	37,600.00	18,800.00	6,618
Oberlin	WPC-APW-La-111	S	STP, LS, FM, Int.	95,700.00	44,700.00	3,000
Opelousas	WPC-La-116	S	STP, LS, FM, Int.	859,500.00	257,850.00	17,417
Ponchatoula	WPC-APW-La-108	S	STP, LS, FM, Int.	341,000.00	161,300.00	6,000
Ridgecrest	APW-La- 87	S	STP, LS, FM, Int.	70,779.00	35,389.00	1,000
St. John Baptist P.	WPC-APW-La-106	S	STP, LS, FM, Int.	681,000.00	336,240.00	14,000
Sulphur	APW-La-113	S	STP, LS, Int.	300,000.00	150,000.00	11,429
Terrebonne Par. #8	WPC-La- 96	-	LS, FM, Int.	155,000.00	46,500.00	2,612
Terrebonne Par. #13	WPC-La-141	S	STP, LS, FM	206,667.00	62,000.00	1,500
Ville Platte	APW-La-125	S	STP, LS, FM, Int.	156,164.00	78,082.00	15,000
Westwego	APW-La-112	S	STP, LS, FM, Int.	1,194,540.00	597,270.00	15,000
46 Projects				32,832,257.00	13,161,049.58	701,561

TABLE V CONT'D 1/

FEDERALLY AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF NEW MEXICO

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Albuquerque	WPC-NM-72		Int & Chlor.stations	$1,247,020.00	$ 250,000.00	201,189
Albuquerque	WPC-NM-81		7 Chlor. stations	125,494.00	37,648.00	201,189
Albuquerque	WPC-NM-94		Telemetering facil.	46,000.00	13,980.00	201,189
Bernalillo	WPC-APW-NM-71	S	Lagoons & OF sewer	152,700.00	76,350.00	2,574
Central	WPC-APW-NM-59		Int's & OF sewer	152,500.00	66,040.00	1,075
Cimarron	WPC=NM-36	S	STP & Int's	42,800.00	12,840.00	1,050
Espanola	WPC-APW-NM-74	S	STP & Int's	324,000.00	150,300.00	1,976
Gallup	WPC-NM-75	S	STP additions	37,500.00	11,250.00	14,750
Las Cruces	WPC-NM-57	S	STP additions & Int's	753,456.00	226,036.68	29,367
Las Cruces	WPC-NM-69	S	STP & OF	766,667.00	230,000.00	29,367
Las Vegas	WPC-NM-40	S	STP	129,245.00	38,773.50	4,000
Melrose	WPC-NM-83	S	Lagoon & OF sewer	12,156.00	3,646.80	698
Mora	WPC-APW-NM-67	S	Lagoon & Int's	-77,800.00	58,300.00 (75%)	192
Quemado	WPC-APW-NM-68	S	Lagoon & Int's	19,745.00	9,849.50	200
Raton	WPC-NM-84	S	STP additions	52,800.00	15,840.00	8,146

TABLE V CONT'D. 1/

FEDERAL AIDED WASTE TREATMENT PROJECTS UNDER CONSTRUCTION - STATE OF NEW MEXICO

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COSTS	FEDERAL GRANT	POPULATION
Ramah	WPC-APW-NM-64	S	Lagoons & Int's	$ 17,700.00	$ 8,849.78	200
Reserve	WPC-NM-61	S	Lagoons & Ints	19,900.00	5,970.00	200
Roswell	WPC-NM-32	S	STP addns & OF	279,000.00	83,500.00	49,154
Roswell	WPC-NM-86		Evaporation ponds for desalinazation plant	253,763.00	76,128.82	49,154
Seboyeta	WPC-APW-NM-62	S	Lagoons & Int's.	20,120.00	10,049.12	160
Taos	WPC-APW-NM-58	S	STP addns & Ints.	75,000.00	37,500.00	3,000
Thoreau	WPC-APW-NM-85	S	Lagoons & Ints.	18,100.00	9,050.00	160
Wagon Mound	WPC-APW-NM-73	S	Lagoons & Ints.	69,200.00	32,531.00	760
	23			$4,692,666.00	$1,464,433.20	318,851

TABLE V CONT'D 1/
UNDER CONSTRUCTION FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Adair	APW-Okla-220	S	STP,OF,Int.,PS,FM	$ 64,800.00	$ 32,400.00	434
Altus	WPC-Okla-107	S	STP,OF,Int.,PS,FM	134,184.00	40,255.20	16,000
Antlers	WPC-APW-Okla-188	S	STP,OF,Int.,PS,FM	177,700.00	80,000.00	2,000
Apache	WPC-Okla-154	S	STP,OF,Int.,PS,FM	45,900.00	13,770.00	1,640
Burns Flat	WPC-Okla-143	S	STP,OF,Int.	30,316.00	9,090.00	2,280
Cleo Springs	WPC-Okla-221	S	STP,OF,Int.	24,200.00	7,260.00	236
Cleveland	WPC-Okla-53	S	STP,OF,Int.	328,500.00	98,550.00	4,085
Clinton	WPC-Okla-172	S	STP	108,500.00	32,550.00	11,000
Clinton	APW-Okla-218		OF,Int.	52,400.00	26,200.00	11,000
Colcord	WPC-APW-Okla-216	S	STP,OF,Int.	24,000.00	12,000.00	173
Delaware	APW-Okla-178	S	STP,OF,Int.	75,000.00	37,500.00	654
Del City	WPC-Okla-125		OF,Int.,PS,FM	83,574.00	25,072.20	13,917
Del City	WPC-Okla-175	S	STP,OF,Int.	301,400.00	90,420.00	25,000
Dewar	APW-Okla-196	S	STP,OF,Int.,PS,FM	121,500.00	60,750.00	817
Dougherty	APW-Okla-222	S	STP,OF,Int.,PS,FM	90,000.00	45,000.00	294

TABLE V CONT'D 1/
UNDER CONSTRUCTION FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Duncan	WPC-Okla-207	S	STP,OF,Int.	$ 358,500.00	$ 107,670.00	20,000
Duncan	WPC-Okla-229	S	STP	455,800.00	136,740.00	20,000
Dustin	APW-Okla-226	S	STP,OF,Int.	37,200.00	18,600.00	457
Edmond	WPC-Okla-139	S	STP,OF,Int.	714,369.00	214,310.00	6,000
Elgin	WPC-Okla-159	S	STP,OF,Int.	43,433.00	13,029.76	800
El Reno	WPC-Okla-219	S	STP,OF,Int.,PS,FM	183,800.00	55,140.00	11,000
Fletcher	WPC-Okla-162	S	STP,OF,Int.	36,938.00	11,081.32	1,000
Fort Gibson	APW-Okla-199	S	STP,OF,Int.,PS,FM	132,000.00	66,000.00	1,400
Freedom	WPC-Okla-155	S	STP,OF,Int.	29,800.00	8,940.00	270
Gould	WPC-Okla-169	S	STP,OF	23,700.00	7,110.00	240
Haileyville	APW-Okla-182	S	STP,OF,Int.	66,400.00	33,200.00	920
Helena	WPC-Okla-124	S	STP,OF,Int.	40,411.00	12,123.27	580
Holdenville	APW-Okla-205	S	STP,OF,Int.,PS,FM	146,000.00	73,000.00	5,700
Hollister	WPC-Okla-122	S	STP,OF	18,800.00	5,640.00	185
Hunter	WPC-Okla-227	S	STP,OF,Int.	21,000.00	6,300.00	175

TABLE V CONT'D 1/
UNDER CONSTRUCTION FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Idabel	APW-Okla-180	S	STP,OF	$ 179,800.00	$ 89,900.00	5,000
Inola	WPC-Okla-147	S	STP,OF,Int.,PS,FM	65,227.00	19,568.20	800
Krebs	APW-Okla-183	S	STP,OF,Int.,PS,FM	163,000.00	81,500.00	1,325
Lawton	WPC-Okla-142		Int.	166,839.00	50,051.73	60,800
Midwest City	WPC-Okla-231	S	STP,OF	779,700.00	233,910.00	36,000
Moore	WPC-Okla-170	S	STP,OF,Int.	450,812.00	135,243.60	5,500
Morrison	WPC-Okla-230	S	STP,OF,Int.	18,000.00	5,400.00	256
Muldrow	APW-Okla-193	S	STP,OF,Int.,PS,FM	228,000.00	114,000.00	1,140
Noble	WPC-Okla-198	S	STP,OF,Int.	92,900.00	27,870.00	1,000
Norman	WPC-Okla-201	S	STP,OF,Int.,PS,FM	1,037,000.00	311,100.00	36,000
Oilton	WPC-Okla-190	S	STP,OF,Int.	81,430.00	24,428.93	1,100
Oklahoma City	WPC-Okla-138		Int.	88,728.00	26,618.50	10,300
Oklahoma City	WPC-Okla-176		OF	279,600.00	83,880.00	217,120
Oklahoma City	WPC-Okla-184		OF	167,500.00	50,250.00	83,725
Oklahoma City	WPC-Okla-185		OF	75,300.00	22,590.00	3,128

TABLE V CONT'D 1/
UNDER CONSTRUCTION FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Oklahoma City	WPC-Okla-186		OF	$ 418,119.00	$ 125,435.71	55,300
Oklahoma City	WPC-Okla-194		OF	101,969.00	30,590.74	7,128
Olustee	WPC-Okla-210	S	STP,OF,Int.	25,700.00	7,710.00	463
Owasso	WPC-Okla-146	S	STP,OF,Int.	49,200.00	14,760.00	3,200
Paden	APW-Okla-181	S	STP,OF,Int.,PS,FM	34,480.00	17,240.00	417
Panama P.W.A.	WPC-APW-Okla-192	S	STP,OF,Int.	124,388.00	54,980.00	937
Paoli	WPC-Okla-168	S	STP,OF,Int.	37,265.00	11,179.53	358
Payne County S.I.D.#1	WPC-Okla-187	S	STP,OF,Int.	55,642.00	16,692.00	185
Porum	APW-Okla-195	S	STP,OF,Int.	55,277.00	27,638.00	573
Pryor Creek	WPC-Okla-177	S	STP,OF,Int.	395,400.00	118,620.00	7,250
Red Oak	APW-Okla-209	S	STP,OF,Int.,PS,FM	46,400.00	23,200.00	433
Roland	APW-Okla-202	S	STP	22,200.00	11,100.00	492
Salina	WPC-Okla-114	S	STP,OF,Int.,PS,FM	91,359.00	27,407.67	1,000
Seiling	WPC-Okla-200	S	STP,OF	39,300.00	11,790.00	910
Shawnee	WPC-APW-Okla-165	S	OF,PS,FM	109,580.00	54,790.00	24,326

TABLE V CONT'D 1/
UNDER CONSTRUCTION FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	TYPE OF TREATMENT	FACILITY	ELIGIBLE COST	FEDERAL GRANT	POPULATION
Shidler	WPC-Okla-152	S	STP,OF,Int.	$ 71,225.00	$ 21,367.50	870
Stigler	WPC-APW-Okla-204	S	STP,OF,Int.,PS	234,200.00	117,100.00	1,923
Stillwater	WPC-Okla-161	S	STP	1,938,900.00	581,670.00	23,965
Tryon	APW-Okla-191	S	STP,OF,Int.	25,000.00	12,500.00	254
Tulsa	WPC-Okla-211		Int.	146,800.00	44,040.00	4,000
Tulsa	WPC-Okla-212	S	STP	206,707.00	62,012.00	50,000
Tulsa	WPC-Okla-213	S	STP	70,800.00	21,240.00	133,516
Valliant	WPC-Okla-120	S	STP,OF,Int.	68,176.00	20,452.80	800
Verden	APW-Okla-203	S	STP	18,800.00	9,400.00	405
Vian	WPC-Okla-157	S	STP,OF,Int.,PS,FM	115,479.00	34,643.70	1,400
Warner	WPC-APW-Okla-179	S	STP,OF,Int.	47,000.00	23,500.00	1,250
Washington County S.I.D.	WPC-Okla-174	S	STP,OF,Int.,PS,FM	571,200.00	171,360.00	4,000
Wister	WPC-APW-Okla-111	S	STP,OF,Int.,PS,FM	148,000.00	69,100.00	835
Yukon	WPC-Okla-160	S	STP,OF,Int.,PS,FM	296,787.00	89,036.07	7,500
	74			$13,409,314.00	$4,486,568.43	492,001

TABLE VI 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Abilene	WPC-Tex-30	852,000.00	250,000.00	90,360
Alice		600,000.00	180,000.00	20,861
Amarillo	WPC-Tex-146	820,770.00	246,231.00	137,969
Amarillo		1,000,000.00	300,000.00	137,969
Anahauc	WPC-Tex-140	440,000.00	132,000.00	1,985
Anahauc		66,000.00	19,800.00	1,985
Aransas Pass		306,000.00	91,800.00	6,956
Archer City		72,000.00	21,600.00	1,974
Arlington		180,000.00	54,000.00	44,775
Bacliff	WPC-Tex-295	121,300.00	36,390.00	3,600
Bayview MUA	APW-Tex-313	304,500.00	152,250.00	1,000
Bellaire		370,000.00	111,000.00	19,872
Beverly	WPC-Tex-195	77,400.00	15,600.00	1,728
Boyd		20,000.00	6,000.00	581
Breckenridge		235,000.00	70,500.00	6,273
Bremond	APW-Tex-296	30,000.00	15,000.00	803

TABLE VI CONT'D. 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO. -	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Brushy Meadows	WPC-Tex-248	202,242.00	60,673.00	3,368
Carrollton		61,000.00	18,300.00	4,242
Castroville		50,000.00	15,000.00	1,508
Celeste	WPC-Tex-93	28,400.00	8,400.00	588
Clarksville	WPC-Tex-101	194,274.00	58,283.00	3,851
Coleman		230,000.00	69,000.00	6,371
Colorado City		246,000.00	73,800.00	6,457
Corpus Christi	WPC-Tex-294	1,210,000.00	339,000.00	167,690
Cotulla	APW-Tex-275	131,100.00	65,550.00	3,960
Cuero		280,000.00	84,000.00	7,338
Daingerfield		100,000.00	30,000.00	3,138
Dalhart		216,000.00	64,800.00	5,160
Deer Park	WPC-Tex-96	346,000.00	97,800.00	4,865
Deer Park	WPC-Tex-159	136,600.00	40,980.00	4,865
Denver City		125,000.00	37,500.00	4,302

TABLE VI CONT'D. 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Devine		75,000.00	22,500.00	2,522
Eagle Pass		420,000.00	126,000.00	12,094
El Paso		980,000.00	250,000.00	276,687
Graham		720,000.00	215,000.00	8,505
Grapeland		30,000.00	9,000.00	1,113
Haltom City		100,000.00	30,000.00	23,133
Huntington	APW-Tex-312	45,600.00	22,800.00	1,009
Hurst		180,000.00	54,000.00	10,165
Jacksonville	APW-Tex-260	69,400.00	34,700.00	9,590
Jasper		160,000.00	48,000.00	4,889
Jefferson Co.	WPC-Tex-62	80,000.00	24,000.00	NA
Junction		91,000.00	27,300.00	2,441
Kenedy		151,000.00	45,300.00	4,301
Kerrville		278,000.00	83,400.00	8,901
Laredo (Del Mar Dist)		900,000.00	250,000.00	60,678

TABLE VI CONT'D. 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Littlefield		230,000.00	69,000.00	7,236
Lone Oak		50,000.00	15,000.00	495
Meadow		15,000.00	4,500.00	484
McKinney		400,000.00	120,000.00	13,763
Newcastle		50,000.00	15,000.00	617
Palacios		102,000.00	30,600.00	3,676
Pecos		290,000.00	87,000.00	12,728
Port Arthur	APW-Tex-253	763,000.00	381,500.00	66,676
Port Neches	APW-Tex-315	508,000.00	254,000.00	8,696
Quitman		30,000.00	9,000.00	1,237
Refugio		170,000.00	51,000.00	4,944
Rhome	WPC-Tex-112	38,000.00	10,905.00	412
Robinson		50,000.00	15,000.00	2,111
Rockwall		58,000.00	17,400.00	2,166
Sabinal		50,000.00	15,000.00	1,747
Sansom Park Village	WPC-Tex-111	194,870.00	57,261.00	4,175

TABLE VI CONT'D. 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
San Antonio		1,400,000.00	250,000.00	587,718
Sanger		50,000.00	15,000.00	1,190
San Jacinto Co. WC&ID#1	APW-Tex-316	52,000.00	26,000.00	800
Slaton		190,000.00	57,000.00	6,568
S. Jefferson Co.	WPC-Tex-74	2,928,710.00	250,000.00	NA
Spur		80,000.00	24,000.00	2,170
Strawn		48,940.00	14,682.00	817
Sulphur Springs		325,000.00	97,500.00	9,160
Tatum	APW-Tex-311	61,700.00	30,850.00	574
Teague	APW-Tex-172	80,000.00	40,000.00	2,728
Terrell		220,000.00	66,000.00	13,803
Tom Bean		50,000.00	15,000.00	403
Tyler		1,400,000.00	250,000.00	51,230
Van Horn		50,000.00	15,000.00	1,953
Victoria		1,500,000.00	450,000.00	33,047
Waco		1,000,000.00	300,000.00	97,808

TABLE VI CONT'D. 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF TEXAS

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Waller		50,000.00	15,000.00	900
Wells	APW-Tex-259	58,000.00	29,000.00	544
Weslaco		274,000.00	82,200.00	15,649
Wharton	WPC-Tex-123	50,327.00	15,098.00	5,734
	79	$26,199,133.00	$7,201,753.00	1,951,562

TABLE VI CONT'D. 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Alma	APW-Ark-155	$ 62,000.00	$ 46,500.00	1,430
Amity		50,000.00	10,000.00	543
Augusta	APW-Ark-169	87,900.00	43,950.00	2,272
Barling		33,600.00	10,000.00	770
Beebe		60,000.00	20,000.00	1,697
Bradley		50,000.00	15,000.00	712
Brinkley	WPC-Ark-179	203,600.00	56,950.00 (APW)	5,000
Cabot		40,000.00	12,000.00	1,321
Cotter		50,000.00	12,000.00	683
Dumas	WPC-Ark-176	38,400.00	17,680.00 (APW)	4,000
Dyess		80,000.00	20,000.00	880
Earle	APW-Ark-175	74,200.00	37,100.00	2,391
Eudora	APW-Ark-182	39,692.00	11,907.00	3,598
Fort Smith	WPC-Ark-181	2,268,483.00	600,000.00	63,309
Fort Smith		1,500,000.00	250,000.00	63,309
Fort Smith		600,000.00	180,000.00	63,309

TABLE VI CONT'D. 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Fort Smith		$ 1,000,000.00	$ 250,000.00	63,309
Fort Smith		1,000,000.00	250,000.00	63,309
Gentry		1,500,000.00	250,000.00	686
Gurdon		40,000.00	12,000.00	2,166
Hughes		45,000.00	15,000.00	1,960
Jasper	WPC-Ark-172	81,400.00	29,304.00 (APW)	273
Joiner		75,000.00	22,500.00	748
Keiser		28,000.00	8,400.00	516
Kensett	WPC-Ark-36	52,900.00	14,812.00 (APW)	1,068
Leachville		65,000.00	15,000.00	1,507
Lincoln		30,000.00	9,000.00	820
Lockesburg		50,000.00	10,000.00	714
Lonoke		75,000.00	25,000.00	2,359
Mammoth Springs		100,000.00	30,000.00	825
Marked Tree		80,000.00	20,000.00	3,216
Morrilton	APW-Ark-162	61,000.00	30,500.00	5,997
Mountain View	APW-Ark-153	69,000.00	34,500.00	983

TABLE VI CONT'D. 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF ARKANSAS

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Mountain Pine		$ 90,000.00	$ 25,000.00	1,279
Mulberry		64,000.00	19,200.00	950
Nashville		60,000.00	18,000.00	3,579
Newport		90,000.00	30,000.00	7,007
Norphlet		100,000.00	20,000.00	459
N. Little Rock	WPC-Ark-180	60,000.00	18,000.00	57,844
Paragould	APW-Ark-167	708,100.00	354,050.00	10,450
Portland		50,000.00	10,000.00	566
Prairie Grove		40,000.00	12,000.00	1,056
Prescott		139,000.00	41,000.00	3,533
Pulaski County	WPC-Ark-171	149,200.00	44,760.00	783
Rector	APW-Ark-174	101,400.00	50,700.00	2,000
Rison		30,000.00	10,000.00	889
Salem		75,000.00	15,000.00	713
Van Buren	WPC-Ark-79	743,300.00	199,964.00 (APW)	7,500
Wheatley	APW-Ark-161	48,700.00	24,350.00	443
	49	$12,188,875.00	$3,261,127.00	153,651

227

TABLE VI Continued 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF LOUISIANA

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Arnaudville	APW-La-143	69,300.00	34,650.00	1,320
Baldwin	WPC-La- 22	187,840.00	56,352.00	1,548
Basile		137,125.00	41,137.00	1,932
Caddo Parish S.D.#1		750,000.00	225,000.00	N.A.
Caddo Parish S.D.#3		120,000.00	40,000.00	N.A.
Caddo Parish S.D.#4		622,971.00	183,891.00	N.A.
Cameron		257,349.00	77,200.00	609
Des Allemands		80,000.00	24,000.00	N.A.
Destrehan		137,000.00	41,000.00	N.A.
Dubach	APW-La-144	57,200.00	28,600.00	1,058
Elton		200,000.00	60,000.00	1,595
Gramercy	APW-La- 86	322,000.00	161,000.00	2,094
Hahnville		153,000.00	45,000.00	1,297
Iowa	APW-La-140	160,000.00	79,500.00	1,857
Jennings	APW-La-130	646,000.00	323,000.00	11,887

TABLE VI Continued 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF LOUISIANA

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Jonesboro	WPC-La-145	411,755.00	123,526.00	6,000
Kaplan	APW-La-127	24,500.00	12,250.00	5,267
Lafourche Par. S.D.#1	WPC-La-138	300,000.00	87,000.00	100
Lake Charles		834,000.00	250,000.00	63,392
Lake Charles #1		667,000.00	200,000.00	N.A.
Leonville		67,000.00	20,000.00	526
Lower St. Bernard		567,000.00	170,000.00	N.A.
Luling-Mimosa Lone Star		190,000.00	57,000.00	2,122
Mamou		330,000.00	100,000.00	2,928
Maringouin	WPC-La-69	57,967.00	17,000.00	1,168
Marrero		666,700.00	200,000.00	9,000
Mermentau	APW-La-129	25,700.00	12,850.00	716
New Sarpy		80,000.00	24,000.00	1,259
Nine Mile Point		666,700.00	200,000.00	N.A.
Paradis		43,000.00	13,000.00	N.A.

TABLE VI Continued 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF LOUISIANA

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Plaquemine		834,000.00	250,000.00	7,689
Pleasant Hill		100,000.00	30,000.00	907
Rapides Parish S.D.#1		840,000.00	250,000.00	N.A.
Roseland		183,000.00	55,000.00	1,254
Slidell	WPC-La-132	795,700.00	238,700.00	9,000
St. James Parish		811,918.00	166,635.00	N.A.
St. John Baptist Par.	APW-La-104	862,600.00	431,300.00	5,000
St. John Baptist Par.	APW-La-105	644,000.00	322,000.00	3,400
Sterlington		83,000.00	25,000.00	N.A.
Sunset		333,000.00	100,000.00	1,307
Vidalia	APW-La- 90	185,200.00	92,600.00	4,313
Waterproof	APW-La-119	99,100.00	49,550.00	1,800
Welsh	APW-La-135	85,000.00	42,500.00	3,650
West Monroe		834,000.00	250,000.00	15,215
Wisner	APW-La-131	79,400.00	39,700.00	1,254
Youngsville	WPC-La-72	78,501.00	18,750.00	946
46 Projects		15,679,526.00	5,268,691.00	160,105

TABLE VI CONT'D. 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF NEW MEXICO

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Anapra	WPC-NM-18	6,000.00	1,800.00	200
Alamogordo		300,000.00	90,000.00	21,723
Artesia		30,000.00	9,000.00	8,200
Carlsbad		250,000.00	75,000.00	28,600
Cimarron	WPC-NM-36	42,800.00	8,560.00 (APW)	1,050
Clayton		50,000.00	15,000.00	3,314
Elida		75,000.00	22,500.00	534
Grants		75,000.00	22,500.00	10,274
Hagerman		50,000.00	15,000.00	1,144
Loving		25,000.00	7,500.00	1,646
Mesilla	WPC-NM-63	161,164.00	35,622.00	1,264
Raton	WPC-NM-84	52,800.00	10,560.00 (APW)	8,146
Roswell	WPC-NM-53	25,970.00	7,791.00	42,000
	13	$1,143,734.00	320,833.00	128,095

TABLE VI CONT'D 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Achille	APW-Okla-236	$ 29,100.00	$ 14,550.00	294
Ada		175,000.00	52,500.00	14,347
Adair	WPC-Okla-14	40,000.00	12,000.00	434
Afton		150,000.00	45,000.00	1,111
Alva		80,000.00	24,000.00	6,258
Ames	WPC-Okla-166	55,489.00	10,936.00	211
Apache	WPC-Okla-87	72,124.00	20,467.00	1,455
Atoka		75,000.00	22,500.00	2,877
Barnsdall		25,000.00	7,500.00	1,663
Bethany - Warr Acres		100,000.00	30,000.00	12,342
Bixby		25,000.00	7,500.00	1,711
Bokchita		125,000.00	37,500.00	620
Boley		80,000.00	24,000.00	573
Butler	WPC-Okla-43	40,926.00	5,850.00	351
Catoosa	APW-Okla-232	94,400.00	47,200.00	638

TABLE VI CONT'D 1/
PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Cement		$ 20,000.00	$ 6,000.00	959
Colbert	APW-Okla-233	40,000.00	20,000.00	671
Cordell		40,000.00	12,000.00	3589
Corn	WPC-Okla-225	33,605.00	9,826.00	317
Coweta	APW-Okla-235	71,000.00	35,500.00	1,858
Crescent		35,000.00	10,500.00	1,264
Durant		60,000.00	18,000.00	10,467
Eufaula	WPC-Okla-21	235,000.00	70,500.00	2,382
Fairview		40,000.00	12,000.00	2,213
Foss		60,000.00	18,000.00	289
Gage	WPC-Okla-80	16,372.00	4,912.00	482
Geronimo		25,000.00	7,500.00	199
Guthrie		50,000.00	15,000.00	9,502
Harrah	WPC-Okla-8	90,000.00	14,171.00	934
Hitchcock	WPC-Okla-167	44,329.00	9,803.00	134
Hooker		10,000.00	3,000.00	1,684

TABLE VI CONT'D 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Idabel	WPC-Okla-84	$ 24,017.00	$ 7,205.00	4,967
Inola	WPC-Okla-24	39,264.00	11,779.00	584
Keota		125,000.00	37,500.00	579
Keyes		20,000.00	6,000.00	627
Laverne		40,000.00	12,000.00	1,937
Longdale	WPC-Okla-164	64,715.00	14,336.00	218
McAlester	APW-Okla-98	781,015.00	233,405.00	17,419
McCurtain	APW-Okla-224	26,300.00	13,150.00	528
McLoud		12,000.00	3,500.00	837
Madill		23,200.00	6,960.00	3,084
Marshall		25,000.00	7,500.00	363
Meno	WPC-Okla-234	12,450.00	3,735.00	118
Morris	APW-Okla-228	28,000.00	14,000.00	982
Mountain Park		50,000.00	15,000.00	403
Mulhall		25,000.00	7,500.00	253
Nash		60,000.00	18,000.00	230

TABLE VI CONT'D 1/
PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Newkirk		$ 25,000.00	$ 7,500.00	2,092
Nicona Park		50,000.00	15,000.00	1,263
Oakland	WPC-Okla-51	17,121.00	5,136.00	288
Okay		100,000.00	30,000.00	41
Okemah		40,000.00	12,000.00	2,836
Oklahoma City	WPC-Okla-214	833,000.00	249,900.00	324,253
Okmulgee		65,000.00	19,500.00	15,951
Orlando		45,000.00	13,500.00	194
Perry		25,000.00	7,500.00	5,210
Ponca City		100,000.00	30,000.00	24,411
Prague		80,000.00	24,000.00	1,545
Pryor	WPC-Okla-17	261,700.00	78,500.00	6,476
Ringling		25,000.00	7,500.00	1,170
Ringwood	WPC-Okla-223	71,141.00	14,653.00	232
Ryan		25,000.00	7,500.00	978
Snyder	WPC-Okla-189	274,000.00	42,573.00	1,663
Sterling	WPC-Okla-173	121,650.00	3,600.00	562

TABLE VI CONT'D 1/

PROPOSED FEDERALLY AIDED WASTE TREATMENT PROJECTS - STATE OF OKLAHOMA

APPLICANT	PROJECT NO.	EST. ELIGIBLE COST	EST. FEDERAL GRANT	POPULATION
Stilwell		$ 30,000.00	$ 9,000.00	1,916
Sulphur		250,000.00	75,000.00	4,737
Tishomingo		60,000.00	18,000.00	2,381
Walters	WPC-Okla-237	26,900.00	8,070.00	2,825
Wetumka		40,000.00	12,000.00	1,798
Wheatland		35,000.00	10,500.00	324
Wilson	WPC-Okla-215	134,595.00	20,000.00	1,647
Woodward	WPC-Okla-217	11,365.00	3,410.00	7,747
Yale		80,000.00	24,000.00	1,369
	73	$6,219,778.00	$1,820,225.00	204,614